AMERICAN VETERINARY REVIEW.

AUGUST, 1896.

EDITORIAL.

BUFFALO THE VETERINARIANS' MECCA.

Veterinary history is to be outdone in 1896. The annals of the past do not record any such event as the assembling in a single city of the members of three large veterinary medical associations simultaneously. We say simultaneously, although the dates are different, but all occurring within the first week of September, and a visitor to one will be the guest of the others. And not only will there be this great trio—the United States Veterinary Medical Association, the New York State Veterinary Medical, and the Ohio Veterinary Medical Societies—but the Association of Veterinary Faculties of North America will also be in session, making the most magnificent and stupendous aggregation of veterinary conventions ever gathered at one point, not only in this country, but probably in the whole world. Everything is now shaping to make this quadruple occasion memorable in our history, and the deliberations worthy of the gigantic event. Of course, the most important occurrence will be the meeting of the National Association, which will convene on the morning of the 1st day of September and remain in session until the evening of the 3d, with just sufficient intervals for the members to enjoy the delightful programme of pleasure now being arranged by the local committees. During that time much benefit is expected to flow to the members and visitors from an intellectual and social point of view. We printed in the July REVIEW a partial

list of the papers to be read, and we again publish a revised synopsis of those that have been announced, and, although there will undoubtedly be more, as there always are, there are plenty of subjects for intellectual delectation and profitable discussion if these were all that will be presented to the meeting. Great questions of sanitary economy of the most vital interest to the country are thus opened up for consideration, the control and eradication of the numerous contagious and infectious diseases that not only depopulate our herds and our flocks, thereby causing great losses to our stock-raisers, but many of them transmit their infection to the systems of the members of the human family, causing in some instances so much disease as to almost approach an epidemic. These questions are live ones, and are everywhere engaging the attention of scientists, and surely the representative body of American veterinarians is to be in the van. Meat, milk, and dairy inspection is not less important, and the always-present topic of higher education will not be allowed to pass without some action to stimulate our colleges to even greater exertion than they are now putting forth. Veterinarians in almost every state are struggling for legal recognition, and the parent association can assist them by her powerful influence and her earnest sympathy. Her members will, beyond this, be interested in the subject of the many sporadic diseases that will be brought forward for consideration and discussion. And then, with social pleasures and good fellowship to be experienced by the reunion of old friends and the making of new ones, mingled with all the delights that are briefly outlined in the programme of temporal entertainment, it is hard to conceive how one can force himself to remain at home during that week, if his going is within the pale of possibility.

We subjoin the list of papers already announced, and feel assured that many others will be in the hands of the Secretary before the day of convocation :

S. B. Nelson, Washington, "Nail Wounds of the Foot."

T. A. Peters, Nebraska, "Serum-therapy in Hog Cholera."

N. S. Mayo, Kansas, "Some Poisonous Stock Foods."

A. E. E. Grange, Michigan,

M. H. Reynolds, Minnesota, "Cathartics."

L. A. Merillat, Illinois, "Veterinary Dental Surgery."

F. Braginton, Indiana, "Dairy Inspection."

D. S. White, Ohio,

J. F. Winchester, Massachusetts, "Diphtheria."

W. H. Dalrymple, Baton Rouge, La., "Some Experiences in the South."

T. D. Hinebauch, Fargo, N. Dak., "Feeding Millet."

W. L. Williams, Bozeman, Mont., "Physiological Variations."

D. E. Salmon, Washington, D.C., "Tuberculosis in Birds."

Dr. Miller (now in Berlin), subject not given.

John W. Adams, Philadelphia, "Veterinary Instruction in Schools of Farriery."

L. McLean, Brooklyn, N. Y., "Horse-shoeing."

In a letter from Dr. Nelson P. Hinkley, of the Committee of Arrangements, we are assured that his committee, with the assistance of the local veterinarians, is working hard to make every visiting veterinarian who attends any or all of the association meetings as pleasant and as entertaining for him as possible. Dr. Hinkley has kindly furnished the REVIEW with a synopsis of the arrangements for entertaining the guests, as far as they have been completed, stating, however, that they are not yet complete, and that as meetings will be held several times before convening time, they expect to have arrangements as perfect as possible by the end of August.

We append herewith the communication of Chairmen Hinkley and Willyoung, which shows the great activity of those entrusted with this aspect of the conventions:

"BUFFALO, N. Y., July 1st, 1896.

"The local committee of arrangements of the U. S. V. M. A. and the N. Y. S. V. M. Society held a meeting in the parlors of the Genesee Hotel, Buffalo, N. Y., on June 16th. They had invited all the veterinary practitioners of Niagara and Erie County to attend this meeting, to assist the members of the committee to make the necessary arrangements for entertaining the members of the U. S. V. M. A., the N. Y. S. V. M.

Society, and the Ohio State V. M. Society, that are to meet on the first week of September at Buffalo for their annual conventions. There were a goodly number of veterinarians present, and all showed a disposition to use their personal efforts to give the visiting veterinarians a royal good time. The Genesee Hotel was selected as the headquarters, special rates were procured, American plan from $2.50 per day upward, European plan $1 per day and upward. The following other hotels give the same rates: Iroquois Hotel, New Tifft House, Brozel House, Mansion House, Continental Hotel, Arlington Hotel, Stafford House, Hotel Ontario. The committee on transportation reported the different passenger agents, who are under control of the Joint Traffic Association, The New England Passenger Association, The Western Railroad Association, and the Southern States Passenger Association, that all the roads under control of these associations would grant to veterinarians attending this meeting the usual one and one-third rate for the round trip. This will give an opportunity for veterinarians in all parts of the United States and Canada to take advantage of the low railroad fare and attend one of the greatest gatherings of veterinarians ever brought together at one time in the United States.

"The committee of entertainment have nearly completed the arrangement of giv ng an excursion to the visiting veterinarians, which will enable them to view the great and only Niagara Falls, with its beautifal scenery. The route will be from the Genesee Hotel, by electric cars to the foot of Main Street, where a chartered steamer will take them a short distance up Lake Erie, and then down Niagara River to the village of Chippewa, on the Canadian side, where we will leave the boat, again take the electric cars, following close on the banks of the river, in view of the Rapids, Dufferin Park, Niagara Falls, on the Canadian side, continuing on down by the Gorge, by Clifton, Canada, to Brock's Monument, passing at the very verge of Whirlpool Rapids, to Queenstown Heights, which lies at the outlet of the Niagara River, into Lake Ontario; there we will leave the cars, and take the boat crossing the river to the American side to the little village called Lewiston, where we again take the electric cars and pass over one of the most beautifully constructed roads in the country, called the Niagara Falls Gorge Electric Road, which is built on the very verge of the Niagara River, Whirlpool Rapids, and all other points of interest. When we arrive at Niagara Falls on the American side time will be given the visitors to view the different points of interest, including the wonderful electric plant, where electricity is generated for nearly the entire State of New York. After sight-seeing of the Falls is over, we will take the electric cars for a short distance above the Falls, where our boat will be waiting to bring us back to Buffalo. On board the boat a lunch will be served to what we expect will be a very hungry crowd, and we are making preparations to satisfy them. A theatre party is also talked of for the members and possibly a drive around the town.

"Arrangements have also been made with the proprietors of the Genesee House, for the usual banquet on the night of the last day of the meeting. The proprietors of the Genesee Hotel have tendered the use of the colonial parlors, for the Association meeting, and also two or three other reception parlors for the use of the meeting of the Association of Veterinary Faculties, Comitia Minora, and other committee meetings. Should the colonial parlor prove too small for the association meeting (and we hope it will), the Governors and Faculty of the Buffalo University have offered us the use of their lecture room.

"This is merely an outline of the work of the committee of arrangements as far as they have gone. Another meeting is called for on the 30th inst., and meetings will be

held every two weeks, and every effort will be made to make the meetings of the U. S. V. M. Association, also the N. Y. S. V. M. Society, and Ohio State Veterinary Medical Society, this year a grand success. It is hoped and believed that the first week in September next will see gathered together the largest number of prominent and well-known veterinarians from all parts of the United States and Canada that ever met in a convention room at any one time.

"N. P. HINKLEY,
Chairman U. S. Committee of Arrangements.
"LESTER E. WILLYOUNG,
Chairman N. Y. S. Committee of Arrangements."

Of less importance simply because it is overshadowed by the prominence of the National Association is the annual meeting of the New York State Veterinary Medical Society, which convenes on September 4th and remains in session until the evening of the 5th, with headquarters at the Genesee Hotel. This society will have, besides its regular order of business, several very important and interesting reports to listen to and discuss, pertaining to present legislation, the State Examining Board, Veterinary Sanitation in New York State and its several cities and villages, and other important veterinary matters, beside the reading of several interesting papers by well-known members of the society. Up to the present time the following veterinarians have signified their intention of preparing papers to be read before this society:

Thomas Giffin, M. R. C. V. S., New York City, "Veterinary Education."

G. H. Berns, D. V. S., Brooklyn, "Navicular Disease in Horses."

J. P. Thompson, V. S., Niagara Falls, "Jurisprudence."

Wilson Huff, V. S., Rome, "Bacteria in Milk."

C. D. Morris, Pawling, "Veterinarians as Sanitarians."

Other papers are expected from some of the well-known members who have failed to send in the subject of their papers. The local committee of this society are also making endeavors to secure a number of animals suffering from different surgical ailments in order that operations may be performed before the society by some of the well-known operators in New York State.

The REVIEW is in receipt of the following letter from Secretary Martin, of the local committee, and as it concerns a very important part of the local arrangements we trust all will respond to it.

"BUFFALO, July 10, 1896.

"*Editors American Veterinary Review:*

"DEAR SIRS:—The local committee of Buffalo, of which Dr. Edward McLeod is chairman and myself secretary, are arranging for the entertainment of the veterinarians who shall attend the U. S. V. M. A. meeting, to be held here on the 1st, 2d, and 3d of September. This committee desire to know the number who will attend. We will consider it a favor if you will insert a notice of the meeting in your journal, and request that those who expect to be here at that time notify the secretary. Very respectfully,

"H. D. MARTIN, *Secretary.*"

We have been unable to get the details of the meeting of the Ohio State Veterinary Medical Society, and we rather fear that the arrangements are not very complete. That does not mean, however, that a very large body of Buckeye veterinarians will not move upon Buffalo at the appointed time, as there will be plenty to interest them outside of their own meeting. Secretary Gribble writes us that the general tenor among their members is that they want to be listeners. We urge upon the members of that society the importance of the occasion, and strongly advise them to have the details of their own meeting as complete as possible, irrespective of the other societies.

The Association of Veterinary Faculties of North America, of which that scholarly veterinarian, Prof. Olof Schwarzkoppf, is secretary, will hold their annual meeting during this week, and will be addressed by the representatives from most of the colleges of the country upon subjects of vital importance to them, while they will be justified in indulging in felicities over the wonderful work for the better that has been wrought largely through their instrumentality in the colleges of the country both in the period of attendance and in the character of the knowledge imparted.

With such an array of interesting events awaiting the membership of these associations, is it any wonder that the REVIEW has predicted the largest gathering of veterinarians ever assembled at one point in the history of the world?

A GOVERNMENT BIOLOGICAL SURVEY.—The Agricultural Department at Washington has instituted a new bureau bearing the above name, and which begins operations the first of this month. The Biological Survey will be charged with the determination of the animal and vegetable belts, just as the Geological Survey determines the mineral belts. It is expected that its results will be a great economic advantage to our agriculturists, horticulturists, stock-raisers, and others engaged in the various animal and vegetable industries. Charts will be distributed showing the exact portions of each State where certain animals and vegetables will thrive best, or can be raised to advantage. These charts are to be supplemented by a catalogue containing every land animal and vegetable in the world, and indicating the areas in which they may be raised or cultivated by Americans.

MASSACHUSETTS CATTLE COMMISSION.—The State legislature of Massachusetts has voted a larger appropriation to the Cattle Commission than they had last year, it being raised to $300,000, while formerly it was but $250,000. The work they have been doing in the systematic inspection of the herds of the Commonwealth, and the extensive inauguration of the tuberculin test, is therefore heartily endorsed by the people, and it is really a vote of confidence. In the meantime, the profession at large will watch with interest the results of the system which is being given such a thorough test by the Bay State.

DURING July and August veterinary medical societies take a vacation. There is in consequence a dearth of news in the journals. Our contributors will find this an excellent time to send in reports of interesting cases occurring in their practice. The REVIEW always welcomes them as being very instructive practically and helpful to the general practitioner.

WE call attention to the advertisement of the New York State Veterinary College (in connection with Cornell Univer-

sity), which will be found on the advertising pages. It will begin instruction on September 21st, and offers many inducements for young men seeking an education in the science of veterinary medicine.

ORIGINAL ARTICLES.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

THE SOURCES OF SOUND AND HEALTHFUL ANIMAL FOOD.

BY A. S. HEATH, M.D., V.S., BROOKLYN, N. Y.

The essential requisites of all animal products suitable for human consumption are numerous and indispensable. They consist in the perfect health of the animal from which they are obtained; sanitary environment, pure air, pure water, sound food, daily exercise in the open day, ample protection from storm, cold, and wet, and absolute cleanliness of animal and surroundings,—and all these in full complement.

No unhealthy animal can yield a sound product, and no product can be too good for human consumption or for profitable production. The best only is marketable and profitable. Though the best product costs more to produce, it yields a relatively larger profit, plus an invaluable reputation for the producer, and reputation is an immense capital. Sound food is indispensable. So also is quality and quantity of palatable food. Though I have great respect for a "well-balanced ration," I in nowise despise a goodly degree of the animal's choice of food. Food that is distasteful is seldom easy of digestion. The human stomach ejects food that the taste loathes, and especially when the system is impaired by illness, or made irritable by satiety. This holds almost equally true of cows made too artificial by pampering, or impaired constitution from too long inbreeding, or lack of proper selection of progenitors, or from any other cause impairing health and vigor. The French have taken advantage of

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this salutary effect of the potability of foods for the quick fattening of cattle. They take a variety of foods, and after cleaning and airing the stables and watering, permit the animals to select the food preferred, kindly giving it from the hand as long as the animal shows a special preference for the first selected. By this method the animal takes more food of each kind selected from time to time, does not soil or mix the kinds of foods, and returns with avidity to those kinds previously selected with renewed eagerness. And when satisfied, a lock of hay is placed before it, the place closed, and the animal luxuriates upon it, and leisurely chews the cud of contentment during the quiet performance of the complicated functions of digestion and assimilation. Thus, twice daily is this gentle and perfect process carried on to the fattening, mellowing and ripening of beef animals in the shortest time, and of those at maturity of life, after having been made more than self-supporting for six or eight years, and producing the best quality and greatest quantity of nutritious beef. Similar methods are resorted to in feeding other animals. The veal of the *Halles Centrales* of Paris is of superlative excellence. Large, pink-fleshed, white-fatted and luscious. Sweet milk and fresh eggs have perfected its quality, and French cooking makes it the most appetizing of food.

It has often been said that a cow is a machine to manufacture fodder and grain into milk. But, though far lower in the scale of creation than mankind, yet, like man, she is endowed with vitality, that sublime principle pervading every organ, function and tissue; she has the senses in great perfection; she is appreciative of kindness, and under it she elaborates better and larger products. And as object lessons are universally appreciated, were it compatible with the general methods of your valuable journal, I could more clearly illustrate these articles on a subject so deeply interesting and so essential to the health and well-being of the public. But under the circumstances I must confine myself to less perfect pen-pictures of animals bred and kept for human food products.

Economy demands that our domestic animals should be, as

far as possible, self-supporting at the earliest period of their lives. Suckling pigs, lambs, and calves come to market early, and at a minimum of expense. But to be healthful and of the best quality, yielding most profit, they must be properly and quickly fed and fattened up to the greatest weight possible. This holds equally true of poultry and eggs. Neither can milk or its allied products of cream, butter and cheese, be produced from other than animals of sound health, fed on nutritious food, having perfect sanitary environment. Sunshine, pure air, and pure water are as essential to animals and good animal products, as sunshine and shower are essential to the rich green pastures of June. And nowhere, and never can such perfect pailfuls of foaming milk, and such bowls of golden butter be produced outside of just such natural conditions.

Milk and cream must be home-made. They soon deteriorate, and must be produced near the centres of population, as transportation over long distances injures their perfection and deteriorates their flavors and food values.

This objection also applies to young food animals, and fowls and eggs. And even to mature meat animals. For as soon as the change from the quiet and content inseparable from fattening for market, to the disturbance, worry, distress, privation of proper food, water, cleanliness and pure and abundant air, rapid impairment of quality and loss of quantity ensues. Stale live animals, like stale vegetables and fish, lack flavor, as well as nutritive excellence.

Too much of the sound health from out-door life and the fresh, rich grasses and grains fed to our beef and mutton producing animals, are impaired by improper feeding and care in long railroad journeys, and lack of time for rest and recuperation in our city stockyards. The contusions and bruises incident to transportation should have time to heal before slaughter, or the keen eye of the purchaser of such meat will give the market price the black-eye, just to the extent of the dark spots on the carcasses. As we pay prime prices for meat we should also receive prime meat. *Indigestion too often hinges on a suspicion.*

As the AMERICAN VETERINARY REVIEW is eminently the guardian of the public health, it should reach the people whose welfare it subserves. It promotes the health of the community, and I therefore purpose to speak with emphasis rather than dilute what I have to say with obscure technicalities.

Food is one of the essential demands of life, of man, of animals and of plants.

> "And homeless near a thousand homes I stood,
> And near a thousand tables pined and wanted food."

(*To be continued.*)

TUBERCULOSIS.

BY DR. U. B. MCCURDY, TOPEKA, KANSAS.

A Paper read before the Missouri Valley Veterinary Association.

In scanning the report of the New York Board of Health we are brought to a realization of the great ravages of the most insidious, silent and deadly disease known to man and beasts. For the four weeks beginning January 18, 1896, and ending February 8th, the report shows:

Deaths from tuberculosis, ... 464

Deaths from typhoid fever, scarlet fever, cerebro-spinal meningitis, measles, diphtheria, and smallpox, . 365

showing 99 more deaths from tuberculosis than from the other six diseases combined. In one year in New York City 14 per cent. of the 5,490 deaths were a result of tuberculosis.

Pleuro-pneumonia, the most dreaded of contagious diseases, is of a very rapid and fatal form, developing in from three to six weeks from time of exposure, acute cases proving fatal in from ten to twelve days from the first appearance of the disease. When the epidemic has run its course it can readily and positively be seen that the disease has been stamped out.

Tuberculosis, which is a slow and chronic disease, differs principally in the degree of its activity, being, generally, of much longer duration, many cases proving harmless. Frequently in the body of some apparently healthy animal it is

almost impossible to detect dormant germs, which are innocuous until by some debilitating disease the animal's vitality is lowered to such a degree that it is unable to further resist the otherwise harmless bacilli.

Tuberculosis is due to a specific germ known as bacillus tuberculosis, which is the exciting cause in all cases, and the disease is contracted by inhalation, ingestion, and circulation, though more commonly by ingestion and inhalation. Local affections of the organs through which the germs pass are usually the primary lesions presented and show different phases in different animals. It is of frequent occurrence that the organ giving passage to the germs remains unaltered, and that the morbid process starts in the neighboring ganglions (viz., bronchial and mesenteric) and later extends to the pleura and peritoneum. At the point where the bacilli are arrested they first determine a formation of miliary tubercles, which, by gathering, form pyramid-like masses. Sometimes these neoformations remain as localized inflammatory centres or become calcified; at other times they undergo a caseous degeneration in fibrous transformation; in some instances they separate, become ulcerous and produce cavities. When they become isolated by connective-tissue prolification from the surrounding parenchyma, or if they undergo complete calcification, the tubercles may heal. In the majority of cases the process becomes general. It may take place:

1. *By Means of Lymphatics.*—The ganglions which are next to the primary tubercles are first involved,—in pulmonary tuberculosis the bronchial and mediastinal ganglions are involved; in intestinal tuberculosis the mesenteric ganglions, the spleen, and the liver.

2. *By Continuity or Contiguity of Tissue.*—This is a mode of propagation which is specially observed in mucous membranes. A pulmonary tuberculous centre which opens into the bronchi may be determined successively tuberculosis of the bronchial, tracheal, and laryngeal mucous membrane, and deglutition of tuberculous matter may produce tuberculosis of the

stomach and intestines. In tuberculosis of the kidneys or genital glands the process may extend to the genito-urinary mucous membrane.

3. *By Means of Circulation.*—The bacilli may be disseminated through the whole system when the destruction of a tuberculous centre leads to perforation of a vein, or when the process directly invades the vascular walls (W. L. Z.) Another means by which the blood becomes contaminated with the tuberculous germs is by inoculation of the subcutaneous tissue. This is mostly the experimental way, and will be treated more fully under the head of tuberculin.

In speaking more particularly of the predisposing causes of tuberculosis I will first consider

Heredity.—Among the wild herds of the plains, tuberculosis is practically unknown, while among the cows of closely-confined dairy herds it is quite common. There is no proof of the direct inheritance of the disease, other than the transmission of weakened constitutions and lowered vitality: in other words, the transmission of hereditary susceptibility.

In-and-in Breeding has the debilitating effect that is so congenial to the ever-invading germ. This is readily demonstrated by an examination of the herds of cattle most susceptible to the disease, and it is found that this is the in-bred variety. On the contrary, the grade stock, or cross between some thoroughbred and common stock, is less susceptible.

Lack of Ventilation.—Unsanitary conditions, as a matter of fact, are conducive to the spread and development of the disease. Close stabling, insufficient amount of air and sunlight, damp, underground stables are all a great source of danger, and I believe this to be one reason why our Western herds are less contaminated than those of the East.

Breeding Too Young.—Over-stimulation for excessive milk-production, lack of exercise, with many other unnatural conditions which stock undergo, lead indirectly to the contraction of the disease. It is generally conceded that all animals are, at some time in their life, exposed to the germ and a large per-

centage of them possess a greater or lesser number of the bacilli in their system. Many have constitutions and sufficient vitality with which they can resist the disease. But the weakened, hereditarily-afflicted ones contract the disease, disseminate the germs promiscuously during their short lives and finally succumb to the inevitable.

Relation to Public Health.—It is generally accepted that tuberculosis is directly communicable from man to beast and *vice versa*. The micro-organism is identical. Ollivier and Boutet record an outbreak of tuberculosis in a boarding school. Cows were kept for the use of the establishment. It was found that one of the cows supplying the milk during a certain period was tuberculous, and during that time six of the children contracted tuberculosis. Strang gives another case. A boy aged five and born of healthy parents died from advanced tuberculosis of the mesenteric ganglia and miliary tuberculosis of the lungs. It was ascertained that he had been in the habit of drinking warm, uncooked milk from a cow suffering from tuberculosis, as was proven by post-mortem. Dr. Gosse, of Geneva, records another. His daughter was, at the age of sixteen, a strong, healthy girl, and there was no trace of tuberculosis in the family. About ten months before her death she began to manifest signs of a mysterious illness, which caused gradual wasting, and ultimately the patient died at the age of seventeen. At the autopsy it was found that the poor girl had suffered from intestinal and mesenteric tuberculosis. It was afterward remembered that she was in the habit, when spending the Sundays on a small estate, where cows were kept, of drinking warm milk almost direct from the cows. In consequence the cows were subjected to an examination and four out of the five were found tuberculous, and two of these had tuberculous udders. Another strong proof of the transmission of the disease through the consumption of meats: Dr. Treon describes the animals furnished to the Northwest Indians as being poor, emaciated and diseased. The Indians eat the entire carcass, including liver, tallow, and entrails, fresh and without cooking. The

animals are eaten though they have died of tuberculosis, and 50 per cent. of the deaths in the Reservation are from tuberculosis. Dr. Peters reports a number of positive cases of direct infection and death from tuberculosis during the performance of his duties as chief inspector of cattle for the New York Board of Health.

Have not these tests given satisfactory proof that the cases were directly traceable to the consumption of meat and milk? The consumption of a great amount of milk from many dairy herds means the consumption of many millions of germs. Look at the ordinary milker with his head against the cow's flank and notice the dropping of all kinds of filth into the milk bucket and you can readily see how the milk becomes contaminated with all kinds of germ life, to say nothing of the germs that come from a tuberculous udder, of which there are many.

In the excellent article by Dr. Parker in the April *Journal*, he quotes the following experiment from Dr. Potts: "The cows were thoroughly cleansed with a solution of bichloride, the milkers being dressed in clean suits and the milk received into sterilized tubes. Before taking these precautions, in all of the four cows used in the experiment the very first milk drawn showed the following respective number of colonies of bacteria:

A.	B.	C.	D.
141	167	19	53

In the remaining milk, drawn after these precautions were taken, there was no trace of bacteria. Thus, it would seem, that as a matter of practical importance, it would be well to strip the teat once or twice before milking into a sterilized pail. In this way the micro-organisms which evidently find their way into the milk duct would be washed out. It also emphasizes the importance of cleanly surroundings for cattle."

Where cattle are few, or absent, consumption is relatively less in man. "In Norway, Sweden, Lapland, and Finland, where reindeer constitute the chief farm stock; about Hudson Bay and in the islands of the Pacific, where no cattle exist; and in the Scottish Hebrides, Iceland and Newfoundland, where

cattle are few, tuberculosis is less prevalent in man. In Algiers (a resort for consumptives) the cattle are few and live apart from the cities, and tuberculosis does not increase among the natives. In Italy, where the cattle are housed, tuberculosis has become the scourge of man and beast. In Australia (the great resort for English consumptives) the disease, formerly unknown among cattle, has become exceedingly prevalent, and the same is becoming alarmingly true of our own Minnesota, formerly so lauded as a favorable resort for consumptives." These are extreme examples, it is true, in which the transmission and fostering of the disease by cattle are extended and aggravated by overcrowding and every imaginable unhygienic condition among the human consumers.

The rare cases of fœtal organic tuberculosis are explained by direct infection which is of internal origin (the bacilli may traverse the fœtal envelopes ; a demonstration of this fact has been given by experiments on guinea-pigs and rabbits), or by the presence of bacilli in the sperm or ovum at the time of fecundation.

A careful study of the subject of tuberculosis brings us to a realization of the work before us and the benefit to be reaped by the public, providing the disease among the dairy herds of the country were brought under control. Stamping out pleuropneumonia contagiosa and contagious aphtha has cost thousands of dollars, but no human lives. Tuberculosis has cost many thousand lives, and, comparatively speaking, but little money.

The subject of eradication is a most serious one, presenting many points for consideration. We must consider the rights of the property owner, the rights of the people, the prejudice to overcome, the many uninformed who must be educated to a realization of the danger, and the best possible means of avoiding it. The interest of the stock-owner must be most seriously considered. No dairyman of ordinary intelligence will object to a thoroughly intelligent examination of his herd. Massachusetts was one of the first states to have a regular corps of inspectors, and a glance at the caste will convince one that there

is still room for improvement. Of 364 inspectors, 58 are veterinary surgeons, 136 farmers, 10 cattle dealers, 20 M.D.s, 8 butchers, and the remaining 62, grocers, painters, provision dealers, wood and coal dealers.

The use of *Tuberculin* in the hands of competent men has given us an almost infallible test. Koch's tuberculin is a glycerine extract of pure culture of tuberculous bacilli. The lymph is a limpid, brownish liquid, which is inactive when introduced into the digestive system, but whose reaction is considerable when injected subcutaneously or intravenously. Its degree of reaction varies with the condition of the animal, there being none in perfectly healthy ones and very marked in tuberculous ones. It possesses a very marked influence upon tubercular alterations. Under its influence the peri-tubercular tissue becomes inflamed and the seat of an exudation or abundant leucocytic infiltration. In general successive injections produce reactions which are in turn less violent. The results of the exhaustive experiments by the many scientists who have been laboring with this subject have not been satisfactory from a curative standpoint. As a diagnostic agent it is indispensable to the advanced veterinarian. With it one can make a positive test on a dairy herd, and one which will on post-mortem prove correct. By this means the Board of Health of various cities can control the sale of milk to the dairy having sound cattle. The veterinarian comes in for his share of the responsibility for public health, and should not falter in his duty.

In our State we must have some legislation on the subject of tuberculosis before such can be accomplished. We must have a veterinarian as a member of the State Board of Health and more thorough inspection of the stock of the State. Undoubtedly you can recall some afflicted herd in your locality; nor are means taken for the eradication of the disease. What is the result? A dissemination of the disease, productive of tuberculously-disposed stock and endangerment of the present and future generations of both man and beast.

This is one of the most important questions of the present

day, and if by any amount of agitation we can have any influence upon proper legislation let us bestir ourselves, and in time eradicate the worst disease common to man and beast.

INFECTIOUS PNEUMONIA.

By F. C. Wilkinson, D. V. S.

A Paper read before the New Hampshire Veterinary Medical Association.

Infectious pneumonia is now generally regarded by the leading clinical authorities and pathologists, in this country and in Europe, as a specific infectious disease.

Green, in his article on "Inflammation of the Lungs," in Quain's Dictionary of Medicine, says: "It is maintained by a great number of observers that, like the specific fevers, it is due to a specific cause."

Pneumonia, whilst differing from these fevers in not being contagious, resembles them in the typical character of its clinical phenomena, and to a less extent of its local lesion. The changes in the lung occurring in pneumonia cannot be induced by artificial injury of the organ, and it must therefore be admitted that there is something special in the inflammatory process. This "something special" has been demonstrated by researches, and it is the object of this paper to give you, gentlemen, a slight historical account of the development of knowledge which has been obtained, in reference to this specific infectious agent, and of the experimental evidence upon which the claim is founded that the micro-organism referred to bears an etiological relation to the disease in question. Evidently, if pneumonia is a specific infectious disease, the micro-organism which causes it is widely distributed and the development of an attack depends rather upon secondary predisposing and exciting causes than upon the accidental introduction of the specific agent. It cannot be maintained that the disease, as a general rule, is transmitted from animal to animal, by personal contagion. Clinical experience is entirely opposed to this view, although there is ample evidence that it may occur as an epidemic among animals which are ex-

posed to the same conditions, as in stables where a large number of horses are kept. Thus, at the barracks in Berlin, in Germany, in the year 1890, an epidemic of infections pneumonia occurred in which 79 horses were attacked, and again in the same barracks in 1892, a similar epidemic of infectious pneumonia broke out in which 55 horses were attacked; there are also numerous records of epidemics in different sections of Europe during the years 1893 and 1894. Sometimes these outbreaks would occur in different countries at the same time. But it does not follow that these outbreaks bear any direct relation to each other. On the contrary, everything indicates that the infectious agent induces these outbreaks at various intervals. Without stopping to discuss further the facts relating to the epidemic prevalence of the disease under consideration, I will call attention to the well-established fact that pneumonia prevails over a wide area of the inhabited surface of the globe; we must therefore conclude, that if pneumonia is a specific infectious disease, the micro-organism which causes it is widely distributed. As a matter of fact, the pathogenic micrococcus which, from the evidence now at hand, appears to be the specific etiological agent in acute infectious pneumonia, has been found in the buccal secretions of healthy animals in various parts of the world. This statement may appear at the outset to make the view that the micrococcus in question is the cause of infectious pneumonia quite untenable. For, it may be asked, how is it that the animals who have this micro-organism in their buccal secretions escape an attack of pneumonia. In the present state of our knowledge, this question no longer presents any serious difficulties. We know, for example, that the pus-organism staphylococcus pyogenes amens, albus and citreus are very frequently found in the buccal secretions and on the surface of the body of healthy animals, and that, although these micrococci are recognized as the cause of all sorts of acute abscesses, they only give rise to the formation of such abscesses under certain special conditions relating to the general health of the animal. It is well known that the tetanus bacillus is found in rich loam in various parts of the globe, and

that the hands of farmers and gardeners are constantly soiled with such earth without their contracting tetanus. This bacillus was discovered by Nicolaier. In the year 1890, Friedlander communicated to the Medical Society of Berlin the results of his experiments with his pneumococcus; the following are the results of one of his experiments: The pneumococci were mixed with distilled water, and injected through the thoracic walls into the lungs of eleven guinea-pigs, six of said guinea-pigs died, and post-mortem being made on their bodies, the lesions of pneumonia were found. Gamelia obtained the following results from inoculations into the blood of sheep and dogs. He inoculated four sheep and twelve dogs with this coccus, and the following is the results of his experiments: Three dogs died in nine days and one sheep in fifteen days. On making post-mortem examinations on their bodies, it was found that they had passed through various stages of red and grey hepatization of the lungs. The experiments of Gamelia go far toward settling the question in a definite manner and considered in connection with those of Talmon and Salvioli, and the extended researches of Frankel, Weichselbaum and Netter, leave llttle doubt that this is the true infectious agent in acute lobar pneumonia.

Morphology.—Short rods with rounded ends, united in pairs or chains of 4, and surrounded by a transparent capsule, stains readily with aniline colors. In preparations from the blood of an inoculated animal stained by an aniline color, the capsule appears as an unstained envelope surrounding the stained cell. A slide cultivation may be prepared as follows: Gelatinized meat infusion, which has been rendered sterile by heat, is poured on a sterilized glass slide, and allowed to solidify. A sterilized platinum wire is then dipped into a growth of the organism which is to be examined, and drawn rapidly over the surface of the preparation on the slide. The bacteria are sown at intervals along the track of the wire, and as they grow, form characteristic colonies, and may be observed in process of growth under the higher powers of the microscope.

Pathology and Morbid Anatomy.—The process is characterized by inflammatory hyperæmia of the lung tissue, and also by the exudation of coagulable material into the pulmonary tissue. This process consists of three stages: engorgement, red and grey hepatization. In the state of engorgement we have the following changes take place: The organ is of a dark red color, its specific gravity and weight are increased, its elasticity is diminished, and it does not crepitate on pressure; if cut into, its surface yields a reddish, frothy, tenacious liquid. In the second stage we have migrations of blood corpuscles into the pulmonary tissue, the lung is much heavier than in the preceding stage, it is also increased in size, the pleura over the inflamed lobe is covered with lymph and sometimes it is bulged out. The lung is quite solid, sinks in water, and cannot be inflated, does not crepitate under the fingers, and is friable, breaks down with a soft, granular fracture. Third stage.—Toward the base of the inferior regions of the lungs may be found zones of hepatization, on section they show a darkish red color, with a few greyish islands; these islands vary in size, some being as large as an orange, and others not larger than a small marble. When of recent origin, they are surrounded by a white zone formed by leucocytes. On their surface, cavities are found ranging in size, these cavities contain necrosed pulmonary tissue. Finally we find purulent centres containing a whitish pus mixed with gangrenous pulmonary tissue. As a general thing, the appearance of the lungs in cases of death in infectious pneumonia are uniform, viz., almost complied disorganization of each lung with numerous and separate abscesses and often with gangrene of parts of the lung affected. The blood in the left cavities of the heart is generally dark and thin. Symptoms: First there is rigors, with a staring coat, disturbance of animal heat, with coldness of skin and extremities, all connected with perturbed nutrition. There is also languor, capricious appetite, visible mucous membranes are of a dull, rusty color, pulsation of the submaxillary artery is increased in frequency, with the vessel feeling somewhat full. The temperature generally runs as high as 105 or 106 Fahr.

When cough exists, which is not always the case, at first it is dry, after some time it becomes less so from the exudation which is taking place in the pulmonic structures. Fœtor of the breath denotes that gangrene and disintegration of lung tissue has occurred. During the height of the fever the urinary secretion is lessened in amount and altered in composition. There is excess of urea, caused by active tissue-change; there is a diminution of the salines, more particularly of the chloride of sodium. We have some physical signs that are deserving of careful observation and study, seeing that, apart from the assistance which they render us, in the differing changes of structure, might pass unappreciated. The sounds detected by auscultation, and elicited by percussion, are both of them in inflammation of the lung substance much modified. In the early stage of arterial irritation, auscultation is increased, with harsh respiratory murmur. This symptom is often followed by a weakening of the normal sound; when effusion takes place, the respiratory murmur is replaced by the true crepitant râle. Seeing that in pneumonia inflammation we do not often obtain anything more definite than a slight amount of dullness, or want of resonance even from other symptoms, we are very certain that the pulmonary tissue is much diseased.

Treatment.—The first thing to do is to pay strict attention to hygiene; abundance of fresh air is indispensable. The body should be clothed according to the season of the year, the limbs bandaged; it is well to envelop them in cotton batting before putting the bandages on. Feed anything that the animal will eat, but be sure and let the animal have all the fluids it will take; keep strength up by giving milk, beef tea, and such things. Let the animal inhale pure iodine vapor four or five times a day. My medical treatment is as follows: Whisky or good French brandy from the first, in dozes of 4 oz. (according to the size of the animal), three times a day, and once or twice during the night, with carbonate of ammonia, and also quinine electuaries. I do not use any counter-irritants, but have the animal's lungs bound around with hot cotton batting. I have

the mouth washed out with acidulated water. During convalescence I administer iron arsenite, and in danger of heart failure I give digitalis.

The following results have been obtained in the biological laboratory at the University of Prague, to determine the germicidal and antiseptic value of the following agents, as tested upon this micrococcus: Alcohol, 24 per cent. sol., destroyed the micrococcus in 2 hours; boric acid, a saturated sol., failed to destroy it; carbolic acid, 1 per cent. sol., destroys the vit. in 2 hours; cupric sulphate, does not destroy; hydrochloric acid, 1 to 200, destroys in 2 hours; iodine aq. sol. with potassium iodine, destroys in 2 hours; mercuric chloride, 1 in 20,000, destroys it in 2 hours; nitric acid, 1 part in 400, destroys it in 4 hours; caustic potash, 2 per cent. sol., destroys it in 2 hours; potassium permanganate, 2 per cent. sol., destroys it in 2 hours; salicylic acid does not destroy; sulphuric acid, 1 part in 200, destroys.

PREVENTIVE INOCULATION AGAINST CONTAGIOUS PLEURO-PNEUMONIA.

By E. Biart, V. S., Lansing, Kansas.

Read before the Missouri Valley Veterinary Medical Association.

The first really scientific way of preventing the spread of contagious diseases among cattle was discovered by Dr. Willems of Hasselt (Belgium) as early as 1852, but was only brought into actual practice at a much later period.

It was established on a solid basis in his laboratory (the stables of a large distillery). The young doctor inoculated directly into the steer the contagious pleuro-pneumonic virus. Injected into the muscle or subcutaneous cellular tissues, the germ produced, in addition to the local tumor, phenomena of severe intoxication, from which the animal died in a very short time. The doctor then decided to inoculate the same virus at the lower extremity of the caudal appendix. There again the symptoms soon made their appearance after the insertion of the

virus, but were of a mild type and the animal soon recovered. It was then proved that the animal had become insusceptible to the disease, for although being reinoculated with the virus several times, and in all regions of the body, there was no more sign of reaction, and the animal did not show any of the symptoms of the disease.

Dr. Willems first isolated the pleuro-pneumonic microbe and with the virus inoculated dogs, cats, horses and other animals without, in a single instance, producing the least inconvenience or symptoms of the disease; but when inoculated into cattle they would invariably show unmistakable signs of the disease. The disease, it was hereby proven, was consequently confined to the bovine race, not being communicable to other animals, nor even to man.

From this discovery it resulted that the opinion of scientists generally was: that the flesh of animals slaughtered in the first stage of the disease is not deleterious to the public health and may with perfect safety be used as food.

The virus was now discovered, but it was so violent that one drop of it injected under the skin would invariably cause death; and it appeared that such a severe poison could never become a beneficent vaccine.

The discoverer resumed his work, and when, after years of laborious researches, he found the best method of gathering the vaccine, the period of the disease when it is at the same time the most active and the most innocuous, and the place of the body where you can safely inoculate, he generously gave the government the benefit of his experiences without asking even a reward.

The Department of Agriculture now appointed a committee of noted veterinarians to investigate the preventive mode of treatment. They consequently repaired to the doctor's home, whose stables it was claimed were proof against the disease, he having inoculated all of the animals with the pleuro-pneumonic virus. The doctor being asked to have introduced in his stables and mixed with his own other cattle manifestly diseased

and this in all stages of the malady, readily consented. And, although they were kept in constant and close proximity with one another for a great length of time, none of the inoculated cattle contracted the disease, nor did they show the least inconvenience. Switzerland and Italy almost immediately accepted the system, which afterwards proved effective and of great value. The practice is now generally adopted, and in those countries wherever employed contagious pleuro-pneumonia is almost a thing of the past. In Belgium, where the method originated, not a case has been discovered in the last two years.

Modus Operandi.—The serum which floats on the expressed fluids of diseased lungs in the first or second stages of the disease, and this must be as fresh as possible, is the right virus for inoculation.

The inoculation is done on the lateral faces of the extremity of the tail by two incisions about two inches apart. The skin is then raised and a small amount of the serum injected the same as vaccination in human practice. A few drops are sufficient.

The animal may then be turned out without further care; but when local inflammation becomes too intense, from 14 to 20 ounces of salts must be given. Generally, after ten days of incubation, seldom before, and at the point of inoculation, will be seen an inflammatory engorgement, hard, hot and very sensitive, very circumscribed, but, in exceptional cases, extending to a vast area of tissue, and this generally becomes gangrenous. In ordinary cases this engorgement gives rise to pustules, turning out serum and covered with scabs, which dry up, but often fall off and leave an ulcerous wound which finally heals completely without care.

In order to have a successful inoculation, these pustules should appear; or at least the inflammatory engorgement. Animals in whom no reaction has taken place should be reinoculated in from three to four weeks.

Inoculated animals must be closely watched from the fifth or sixth day after the operation, and as soon as tumefaction is

seen at the seat of inoculation, a long deep incision should be made, and this should bleed freely and suppuration encouraged. If it is noticed that the end of the tail becomes gangrenous it should be amputated till in the sound portion, as this is the only way to stop the invading process of the disease.

By carefully carrying out the above instructions failures are almost impossible.

ADDRESS BY PROFESSOR LIAUTARD

TO THE GRADUATING CLASS OF THE AMERICAN VETERINARY COLLEGE.*

MR. PRESIDENT AND GENTLEMEN:—A committee appointed by your society has done me the honor to ask me to present you with a few remarks, some friendly advice as to your future conduct when, relieved from the benches of the lecture-room, you will find yourselves in possession of your diplomas, which will make you members of our noble profession. I accepted the compliment, made the promise; allow me to-day to try to fulfil it.

The subject of *Deontology* is one which, unfortunately, is yet ignored in the curriculum of our American colleges, and, yet, how important it is. You can realize it, you who in a short time are going to enter upon the tribulations of veterinary practice, and who the day following your graduation will find yourselves in the presence of these important questions:

What obligations are now expected from me?

What duties have I to perform to deserve the honor bestowed upon me, and that my alma-mater has a right to expect from me as one of her alumni?

To tell you all and mark your line of conduct in your new life would certainly require longer time than I can ask of your attention; but, if you will permit, I will only consider, and that briefly, three points which, I think, are of the utmost impor-

* Read to class at the close of session 1895-96.

tance, and which have been my personal guides in a professional life which has lasted but a few years short of half a century.

These three points are involved in the consideration of your duties towards your colleagues in the profession, of those towards your employers, and last, but not least, of those towards your patients.

1st. Duties towards your Colleagues.—You now have your degree, you have returned home among your relations, your friends; and, once rested from the excitement of the few last months of your student's life, you have selected a place to establish yourself.

The struggle for life has begun. How hard is it going to be?

Let me guard you against a feeling which is likely to overcome you almost at this time, at the start of your professional life—one of disappointment!

Many of us, when just leaving school have felt that the world was ours, that practice was going to fall on us at once, that because we had put up our shingles and distributed our cards and said "*Here we are*," there would be for us no rest, because of a rush of practice, of success, of wonderful recoveries, etc., etc. And, yet, weeks and weeks, months after months, have gone by before we could record our first case, before we could speak of our great success in relieving a patient, which had been left to our care after many others had already tried, but in vain, also, to cure.

Yes, perhaps even longer time than that may elapse before pecuniary success seems to smile on us to refund the great expense which our education had imposed on us or our family and friends.

Do not think that I am picturing a too sad prospect; but if you are prepared for it, how better shall you feel, if, on the contrary, success should come with your first efforts.

Let me say, do not be too hasty in the selection of the place where you will settle,—but be careful and watchful of your opportunities, and also of your personal facilities to adapt yourselves to circumstances. To some, a large city will be the place;

to others, a smaller town, with chances for growth, will do better. But, whichever it may be, do not change it until you have given it a fair trial. In either place, you may or may not find practitioners. If you are alone, your conduct is readily indicated, your road is straight, its smoothness will depend on you; but, if you find others already established, the task may prove more difficult.

In our days, and in the majority of our States, the distinction of *regulars* and *self-made men* no longer exists. The laws of registration which have been established have removed the distinction, and, therefore, you will meet with both on equal footing in many instances. Among the regulars you will meet with graduates of various schools. Remember that all of them are members of the veterinary profession, and as such deserve brotherly relations. You younger men must act towards the older as in all phases of society, of social life. The young owe respectful conduct towards the older, as long as they are themselves known as deserving of the same. To ignore those whose professional standing has kept them out of scientific professional relations and societies, is a lack of courtesy. Professional conduct is part of a gentleman's conduct. Above all, the veterinarian must be and must remain a gentleman.

Let me advise you to act in every instance towards your colleagues as you would expect them to act towards you. Do not think that their standing, their education, their graduation is superior or inferior to yours. The talent and knowledge of a man makes his standing, his reputation. Be indulgent rather than bombastic. Modesty is one of the qualities of the true talented man.

No matter in what location you may establish yourself, I would say: Look for the company of physicians; if possible, frequent the meetings of their societies, and, above all, join those of your own profession. The advantages that you will derive from contact with medical men, from the discussion that you will listen to at their meetings, from the renewal of friendship that you will once again seal at the gatherings of veterinarians,

are too numerous for me to resume at this time; but I personally know that no one can express nor tell the amount of information, of encouragement, of pleasure, that can be reaped by attendance upon those gatherings. One must have benefited by them to know. And it will be only in later years that you will realize the good they have done you.

"*Union* is *Strength*" must be one of your mottoes for the balance of your professional lives. Veterinarians must be brethren; they all come from the same origin, their work is the same, their object in life, their national usefulness are the same.

In the ordinary relations of life, veterinarians must lend to each other mutual help and assistance, and, whenever the occasion presents itself, give to each other the marks of esteem and consideration that belong to gentlemen and to gentlemen of education. Perfidious actions are too sad to consider. Underrating services are below the respect that one owes to himself.

What must be the duties of the young veterinarian in case of consultation?—In all cases, besides the example of good manners, good education, politeness and mutual respect, the consulting veterinarian must treat his colleagues with all possible consideration. He must, above all, guard himself against the tendency to show superiority and to ridicule his colleague. Do not express your opinion too freely, do not give your advice nor express your ideas in public; and, far from it, I will say, with Thierry, in his excellent work on "Veterinary Deontology": "Give your strong approval of the treating veterinarian in all cases, as long as you can do it without offending your conscience and the trust placed in your hands." In a consultation veterinarians ought always avoid, in front of their client, scientific discussions; they are generally useless; they ought never hesitate to acknowledge an error.

Duties towards your Client.—These do not consist alone in the same obligations as those that are imposed between gentlemen, but specially of those that *trust* obliges on the part of the one who receives it towards he who grants it.

The person who comes to you asking your opinion in a case

of purchase, the one who consults you as to the quality and soundness of an animal, places on you a trust, which must not be measured by the value of the animal, but whose greatness is doubly increased, as it is not only to the man, but to the professional man that it is given, and which on that account deserves the greatest care and most complete abnegation and disinterestedness. He gives you a fee, and that must be the only pecuniary reward you can anticipate. Commission, gratifications received from both hands, are breaches of trust that no respectable man can be guilty of, no matter what temptation may be presented.

The veterinarian owes to the public, to his client, his faithful attendance, and often he is obliged to ignore pleasure, sociable relations, family gatherings, and even much needed rest to answer the call to attend the duties of his profession. In these, it is due to the client that the greatest care should be used in the diagnosis and prognosis of a disease, and in deciding as to the treatment of a patient. Let me point out the danger that may arise from an error of diagnosis, when this is made in a hurry, without having exhausted all the means of inquiries into a disease that are at our disposition. Better hesitate in making a diagnosis than to make one which has to be recognized wrong in the following twenty-four hours. As to the prognosis, how careful one must be. Not to be too positive is sometimes a great advantage. Be careful of too much certainty in curing, or of too much positiveness in incurability. That both of these points are important, is too evident, and in duty to the client have to be carefully considered.

Do not lack confidence in your ability to cure, if you see that the chances are in favor of the patient, and if the expenses are not to surpass its value. But, again, you will do better to decline to undertake treating an animal which by his diseased condition tells you that after you are through with him, he will be just as valueless. You may at first lose something by this, but in the end, I personally can assure you, it pays best.

Duties towards your Patient.—If to the client you owe so much on account of the trust he places in you, to the patient, to

the dumb suffering brute, you certainly owe no less, though your obligations are of a different nature.

In accepting the undertaking of the care of a sick or lame animal, in accepting the responsibility to allay his sufferings and to relieve him, to cure him, you sign a moral contract, which for its fulfilment will demand your attention, your energy, your intelligence, and in many instances send you back to your studies. To him you are in duty bound to give many of your thoughts; to carry him through his sickness, you have to use all the means that medical science has taught you to help in similar circumstances; to return him to his work, to his usefulness, to his owner, your services must always be ready by day and often by night.

But, besides these, there are others that perhaps are not your obligations as veterinarian, but become such as a gentleman, and are always to be expected from you. By them, I mean obligations of kindness. It is true that in many instances means of restraint, of punishment, are required to subdue an animal for operation, no matter how simple, even for the administration of medicines. Be kind to those patients, avoid unnecessary punishment; ignore, by all means, rough or brutal handling, and do not unnecessarily add to their miseries those that you would inflict upon them; do not forget that they are dumb, often powerless and, above all, that they are already suffering.

To be kind to all animals is a motto which belongs to all veterinarians, and which I am sure you will all remember.

REPORTS OF CASES.

POISONING BY PARIS GREEN.

By COLEMAN NOCKOLDS, M.D., V.S., Grand Rapids, Mich.

Subject, gray mare, Norman breed, 5 years old, good condition. Received message by telephone that above animal had eaten half pound of Paris green and was very uneasy. Dr. Conkey and myself started immediately and arrived at the farm about one hour and a half after the mare had eaten the poison.

The farmer's wife had placed one-half pound of Paris green, done up in a paper parcel, on the bed of a wagon, and the farmer had tied his horse to the wheel, with the result that he came back in time to take a small piece of the paper from the mare's mouth and wash out a small quantity of the poison. She had eaten everything else, even the string that was around the package. Owner had given about four quarts of milk, half pound of lard, and eight eggs.

We found animal very uneasy, pawing with front feet, champing jaws, frothing at mouth, and a wild anxious look about her eyes; temperature up one degree, pulse sixty, hurried respirations, evidently suffering from very great gastric irritation. We gave one-half pound carbonate of iron in a pint of linseed oil, and subcutaneously an injection of morphine, ten grains. In half an hour gave another injection of morphine, five grains, and then left, after ordering carbonate of iron, one-quarter of pound, in pint of oil, every hour. This was about ten A. M. At three P. M. again visited animal; pulse 120, respirations 100, no change in temperature. Administered morphine sulphate, five grains, subcutaneously, and fl. ext. belladonna, two drams, per orem, and repeated morphine injections about every half hour, also continuing to give oil, milk, eggs, etc., at different intervals, until twelve that night, when pain left the stomach and went to the intestines; animal persistently refused water and passed no fæces, but urinated freely during this time. At 1 A. M., pulse 120, very weak and indistinct, respirations 100, staggering gait, and animal acted as if blind. Administered belladonna and digitalis with intravenous injection of barium chloride, fifteen grains; in a few minutes patient passed a quantity of fæces, at 2 A. M. repeated above treatment; animal passed more fæces; which were highly colored by carbonate of iron. Animal commenced to get easier and drank some water. At 6 P. M. animal was much better; pulse 60, respirations 40. I then left, after ordering stimulants to be given, and asked owner to call me if animal got worse. Seven days later owner was in town, and said he had turned the mare out to pasture and she seemed in her usual health.

I used the carbonate of iron simply because it was the nearest preparation to the peroxide we could get at the time. Altogether there was administered to the patient two pounds carbonate of iron, one dram morphine sulphate, four quarts linseed oil, besides milk, eggs, etc.

A REMARKABLE CASE OF TETANUS.

By ROBERT ROBB, Terre Haute, Ind.

On Sunday, March 29, 1896, I was called out five miles in the country by a Mr. T. to arrest the hemorrhage from a steer's horn that had been dehorned the day before. After seeing my patient and doing all that was necessary, I was about to take my departure when a Mr. B., a neighbor who was present, spoke to me about something growing over his horse's eyes, and wanted me to remove them before they got too bad. I mentioned that I would drop in as I passed on my way home. The neighbors present took advantage of the occasion and went down to see the operation. After ordering the horse to be brought out of the stable I was greatly surprised to behold a case of tetanus before me of the opisthotonos form. I at once gave my diagnosis as tetanus, but this caused the owner and neighbors present to look amazed. Some began smiling as if I had made a very bad break, so to speak, but finally the owner accepted my opinion, after pointing out the pathognomonic symptoms. I then examined the horse carefully, but found nothing that I could give as a cause (traumatism), though I mentioned that the trouble could and does arise from other causes outside of wounds. This again was new, and caused some comment among those present. From the history I got the first symptom that was noticed of something being wrong was the day before while at work. Having the horse walked, stiffness was well marked, both in front and behind. The membrana nictitans were withdrawn from their sockets, trismus was slightly marked, and swallowing impaired, as he drank very slowly and sparingly. From this day he never partook of food. After ordering the horse to be removed where he could have quietude, he was placed in a nice roomy box stall. After seeing to his comfort that day I gave him a hypodermic injection of sulphate of atropia gr. i, and left instructions to let no one near him except the owner, and then I restricted him. On the following day pulse and temperature were normal, stiffness more marked. After making up a solution consisting of barb. aloes, ℥ ix, fl. ext. bellad., ℥ ii, pulv. zingiber., ℥ ss, tepid water q.s., Oii. I found it impossible to drench him, owing to trismus being more marked. I then decided to put him on solid ext. belladonna, placing ℥ ii, three times a day, on the incisors and tongue with a paddle of wood two feet long and one inch wide. This way of administering was very easy, at the same time the animal getting the effect of the drug. Enemas were given every morning of tepid water up

till the twelfth day. On the third day there was no change, pulse and temperature normal, respirations 10, stiffness more marked in general, food and water refused. On the fourth day much the same, could see no change, neither one way nor another. From the fifth to the tenth day he seemed to be at a standstill, as it were, resting very easy under the circumstances, still everything refused. From the eleventh day till the fourteenth the pulse became weaker and irregular, though at times becoming steadier, respirations quickened. During this time he could move his lips very freely, the incisors being opened fully an inch wide. From the fifteenth to the twentieth he began to grow weaker, bracing himself more firmly on the ground, the legs apart and extended, the levators humeri stood out from their fellows like bars of iron, opisthotonos becoming worse, the eyes more fixed in their orbits, giving the face a haggard and worn expression. The animal now looked more like a wooden horse with the exception of his breathing. On the sixteenth day the owner by chance tried him with water and, to his surprise, he began to show indications of drinking, but so slow was he that one could scarcely see any change in the bucket that he drank from. After he had made several attempts he began to improve a little, so as to drink about two quarts at one time, taking about ten minutes to get this down. At times the power of deglutition seemed to be arrested as he would swallow small quantities apparently all right, then all of a sudden it would seem impossible for him to do so, though craving it. I then began to give him ℥i doses of sodæ hyposulphite, three times a day, in his water. This way of drinking was kept up till the afternoon of the twentieth day, when he refused to notice water. From the sixteenth up to the twentieth day, he stood game on his feet, bracing himself outstretched and whatever moving he did, which was very little, the feet were scarcely lifted up off the ground. It looked like a pity to keep an animal in this condition, but after his living out two weeks I was determined to try and keep life in as long as I could, even if my prognosis was unfavorable. On the afternoon of the twentieth day I went out as usual; found him worse than in the morning; breathing labored, pulse imperceptible, eyes sunken, stiff as a board; died last evening about 8:30.

This case, I think, is one of the exceptions, as far as duration is concerned, as I have never had the privilege of reading about a case like this, wherein an animal lived as long as he did, suffering from tetanus, without food or water. In my experience

with tetanus heretofore, it either arises from traumatic or idiopathic causes. I could always see a change for the better from the eighth to the tenth day; if unfavorable death always took place from the third to the seventh day. I should like to hear through the REVIEW from my professional brethren or the Editors their opinions on this case. You will note that this horse nearly received one pound of belladonna during his entire sickness.

GUNSHOT WOUND IN A DOG—REMARKABLE RECOVERY.

By JAMES MCDONOUGH, D.V.S., Montclair, N. J.

The subject was a red setter, who on July 1st, was shot, the ball passing through the sub-lumbar region, leaving a small portion of the omentum protruding through the opening, which the animal proceeded to remove with his teeth, by pulling it out and biting it off. When I reached there, there were seven or eight pieces from one to two and one-half inches long, strewn about on the piazza, and what seemed to me to be the rest of the peritoneum (?) hanging outside, torn and bleeding. Well, I thought I would do something to earn my fee, so I clipped the hair, and washed the parts, using a creolin solution; then I clipped the ragged ends hanging from the peritoneum, made a large incision, and returned it to the abdominal cavity, thinking he would present a better appearance when dead. After dressing with iodoform, and bandaging the body, I prescribed aconite and belladonna, to be given in small and repeated doses. The next morning the dog seemed to have forgotten that he had been shot, and without any complications, other than a small abscess, made a grand recovery in fifteen days.

Of course, I expected peritonitis to set in, and the only theory that I can advance for its not doing so, is that there was not enough of the peritoneum left to make a case.

FOUR CASES OF OPEN JOINT.

By W. H. GILBERT, V. S., Leesburg, Ohio.

I was called to see a ten-year-old horse that had fallen down on some small stones that had been put on a road and cut two-thirds across the left knee, through the capsular ligament in one place, the synovial fluid coming out of the wound, the knee swelled, sweating on the shoulders. He was in so much pain that I could not tell anything about his pulse nor respiration. I gave him nitrous ether ℥ ii, cleansed the wound, put a splint on the back part of the leg, provided a large pad of absorbent cotton,

and long roller bandage; then applied equal parts of powdered alumen and amylum on the wound, and covered the pad of cotton with a liberal quantity of the same. Having the pad held against the wound by an assistant I applied the bandage rather snugly. I removed this carefully every twenty-four hours, for one week, and by this time the synovia had ceased running, when I applied boracic acid three times a day, leaving the bandage off, but keeping the splint bound on the back part of the leg tight enough so that the horse could not bend his knee. He was tied short so that he could not get at it. In two months it was healed over. The owner hauled two loads of corn with him and then turned him out and he got down to roll, but immediately arose, with the same knee torn clear across into the bone. This horse died in four days.

I have treated three horses with open joints since with success, but when not at work I would have stout splints buckled on, and keep them on for five months.

EMBRYOTOMY—AMPUTATION OF FORE LIMBS AND THORACIC EVISCERATION.

By L. D. Ives, D. V. S., Wallingford, Conn.

On June 5th I was called to see a cow which was in labor. On arriving at pasture where she was lying, found the patient to be a large Holstein cow 9 years old.

Condition.—The forelegs of fœtus were protruding from the vulva of mother and in a state of putrefaction; the head was bent back on the right side and delivery was impossible in this condition.

History.—Owner had found her in that condition the night previous, and he, with the assistance of two other men, had applied severe traction a number of times, which much complicated the case.

On examination found an enormous fœtus too large for natural birth to take place; tried repulsion, but was impossible, so decided to amputate limbs, which was done. This, however, proved not enough, so removed the viscera through a hole in thorax. Traction was now applied to head, and fœtus delivered without further difficulty.

The patient was very weak as a result of the operation and prolonged labor, but has made a rapid recovery, and is now doing nicely. Mammitis complicated the case, but yielded easily to Prof. Ryder's treatment.

SOME CLINICAL OBSERVATIONS.

We take pleasure in continuing the series of cases which Prof. Peuch published in the *Journal of the Lyon School*, and which are collected from his clinics. It may induce the members of the medical staff of our American veterinary colleges to follow his example.—[EDITOR.]

ARTICULAR OR TENDINOUS LESIONS OF THE HOCK.—Under this title we desire to speak of chronic synovitis, tibio-astragalian, or tarsal, known under the name of *articular* and *tendinous thorough-pins*. These lesions are frequent in horses, and it may be useful to expose the principal means of treatment that we use, so much so that we have obtained with them excellent results. These modes of treatment are the cauterization with deep and penetrating points, or again puncture, followed by the injection of iodine, according as the case is a dropsy of the tibio-astragalian, articular, or one of the tendinous tarsal, synovial.

First. *Firing in Fine and Penetrating Points.*—We always applied this mode of treatment when the articular thorough-pin produces lameness. We use a fine point about three-quarters to one inch long, according to the thickness and the induration of the walls. We introduce it, when heated to cherry-red, two or three times in each point, seldom more. And on thick-skinned horses, we immediately cover the cauterized region with a mixture, equal parts, of blister ointment and biniodide of mercury pomatum (to the quarter). We omit this application in warm weather. Thus applied, firing gives rise to an ordinary synovial escape, in small quantity. There are at the surface of the points made by the cautery, little drops of synovia. This escape lasts for the day following the operation, but stops after one or two days. Should it last longer, it indicates that the cautery used was too thick, or that too many applications have been made. In such cases suppurative arthritis occurs, which is generally fatal. But this dangerous complication can certainly be prevented by the use of fine cauteries. Our long experience justifies us in this assertion. We may also observe that this mode of cauterization produces therapeutical effects very satisfactory. Often a single application of this deep firing cures entirely horses lamed by indurated articular thorough-pins, leaving afterwards but little cicatrices of the punc-

tures, scarcely visible and often entirely concealed by the hairs. In some cases, when applied on articular thorough-pins, with very thick, indurated, partially ossified walls, in heavy draught horses used to a work requiring powerful efforts, a first application of the firing may not be sufficient. However, even in these rebellious cases, needle cauterization always proves advantageous, it relieves the lameness to some degree.

Second. *Puncture and Iodine Injection.*—This is used only for the tarsal tendinous thorough-pin. It is not always sure, but often gives good results. For instance, we find in our records, kept by our students, eight cases operated upon in that way.* Among these, six were followed by a complete resolution of the tendinous synovial tumor, leaving no trace whatever of the treatment, in a lapse of times varying between two and six months; one failed, and another was only partly successful. We record here only these two last cases.

Observation I.—A sixteen months old filly is brought to our clinic with a tarsal thorough-pin, which disfigures her and depreciates her value. The tumor occupies the hollow of the hock, inside and outside, and extends downwards to 3 or 4 centimeters of the chestnut; it is soft, fluctuating and produces no lameness. Thrown and secured, our assistant punctures the tumor at the most dependent part, viz., on a level with the inferior *cul-de-sac* of the tarsal sheath. This puncture is made with the trocar No. 2 of Dieulafoy's apparatus, in a direction "oblique from the surface to the depth and from downwards upwards." An attempt is made to draw the synovia with the syringe, without success; but, as the instrument is withdrawn, a few drops of synovia escape through the canula. The iodined solution is then injected†; it was intended not to leave it more than three minutes, but after that time it is impossible to extract one drop of it either by aspiration or by pressure on the tumor. Several other punctures are made, even in the supero-internal *cul-de-sac*, without positive result. A severe inflammatory reaction followed this operation. To relieve it, the animal was placed in slings, and continued cold irrigations applied on the swollen hock. After two days, the pains subside. But the hock remains swollen, and after forty-seven days the mare is returned to her owner. The lateral faces of the hock are swollen, as is

* A plan that we recommend to the principal director of the clinical department of our American veterinary colleges.—[EDITOR.]

† This solution is composed of: Sublimate iodine, 1 part; alcohol, 15 parts; iodide of potassium, 2 parts; distilled boiled water, 30 parts.

the infero-posterior part of the joint, in the region corresponding to the tarsal arch. A year later, the swelling has considerably diminished, it feels puffy, not fluctuating, produces no lameness, but diminishes the value of the animal.

Observation II.—A very handsome heavy draught horse, four-and-a-half years old, has on the left hock a tarsal tendinous thorough-pin, as big as two fists, more developed on the inside; not laming the horse, but being a serious blemish, which it is desirable to remove. The iodine injection will be tried. The operation is performed with the trocar No. 2, of Dieulafoy's apparatus, and the syringe connected with it. The entire synovial collection is removed and replaced by a nearly equal quantity of solution composed of tincture of iodine (to the 12th), 10 parts; distilled water, 20 parts; iodide of potassium q. s., to make a limpid solution. This was allowed to remain half a minute only in the tarsal sac, and was withdrawn by aspiration with the Dieulafoy's syringe. The operation was performed without complication; the immediate sequellæ were very simple; the inflammatory swelling not excessive; the lameness trifling. Eight days later, the hock is larger than before the operation, the animal is removed home, with directions that he should do light work for a couple of weeks and then return to his ordinary duty. A month after, the thorough-pin has noticeably diminished, and the horse is used to work requiring powerful efforts; he works as a shaft horse, with loads of 2,500 to 3,000 kilos. Several months later, the thorough-pin is larger than before the operation performed five months ago; it is soft, puffy, not fluctuating. Returned to the hospital to be treated for an attack of typhoid fever, fourteen months after the injection of iodine, we observed that the hock is much reduced. It is smaller than at the time of the operation, but is there still. Is the failure due to the short sojourn—half a minute—of the iodined solution, or to the violent efforts of the work performed too early, a month after the operation? We incline to believe that the first cause is most likely the correct one; on that account, since that failure we leave the injection one and even two minutes in the sac, according to the length of time since the lesion has existed, and also the supposed irritability of the subject.

A Case of Poll-Evil.—A mare, aged seven years, had a diseased condition of the poll for seven months. At first it manifested itself in the shape of an atloid hygroma, then came fistulæ and the mare could not be used, as she could not carry a

bridle. She is very restless to dress. In glancing at the poll, this region is the seat of a diffused tumefaction, more marked on the left than on the right, in which there exist two fistulous openings, reddish, situated near the median line, towards the superior part. The diseased region is so painful that it is impossible to explore it in the standing position, the animal fights too much. It is necessary to cast her. Then two fistulous tracts are found, running on each side of the cervical ligament; that of the left side a little higher than the right. From them escapes a great quantity of thin, serous pus; exploration with various probes shows that the fistulæ are sinuous. With the bistoury they are enlarged, and then explored with the finger; it is found that under the cord of the cervical ligament, between it and the atloido-occipital ligament, there is a large cavity, irregular, with granulating walls, containing unhealthy pus, mixed with mortified tissues. This cavity has developed in the fibro-elastic tissue situated between the two ligaments above named, and is formed at the expense of this tissue and of the serous bursa which assists the sliding of the cord of the cervical ligament over the atlas. The bursa is destroyed by the suppuration, which is itself sustained by the necrotic lesions of the surrounding tissues. These lesions have originated in the atloid hygroma, observed seven months ago, and also probably through some traumatism, such as violent rubbings, bruise or pressures, having injured the skin in its entire thickness, thus opening an entrance to the pyogenic microbes. The case is evidently serious on account of the length of time of its existence, its deep situation in a region whose anatomy is so complex and the movements so frequent, which will render the cicatrization difficult. And, again, it is known that, in that region, the necrosis has a tendency to spread, that the atloido-occipital can be destroyed, that purulent infiltrations may take place, and reach the vertebral canal or in time give rise to septic or pyæmic complications. Observation has shown, however, that these dangerous complications can be prevented by section of the cord of the ligamentum nuchæ. With this operation, the constant pressure that it makes over the tissues underneath is removed, and there are chances for the inflammation to subside and for the entire elimination of the necrosed parts to take place; in other words, for recovery. Accordingly, *cervical desmotomy* is performed immediately. To this effect, the straight tenotomy knife is introduced, flatwise, in one of the wounds made in enlarging the fistulæ; then the sharp edge of the instrument is turned against

the ligament, the head extended on the neck and held firm, the ligamentous cord is divided, in its whole thickness, from inwards outwards, being careful not to divide the skin. All this is done quickly, as the blood is escaping very freely; the wound is plugged with oakum, soaked in perchloride of iron solution, and closed with quilled sutures. Twenty-four hours after, these are removed and the wound dressed with a mixture of naphthol and camphor, equal parts. Under the influence of this dressing, made daily, the cicatrization begins to take place, the soreness of the poll diminishes, but the swelling remains, specially on the left side. A few days later, about ten, a fistulous opening is discovered on the left of the wound of operation; thick, white pus escapes from it, free from necrosed parts. This fistula is injected with a solution of iodine, viz., 10 parts of the tincture, 20 of distilled water, and sufficient quantity of iodide of potassium to make the mixture limpid. The dressings of naphthol and camphor are continued. Forty-seven days after the operation, all the wounds are cicatrized, the poll is no longer swollen, but yet remains painful; but a month later, the animal can stand the pressure of the bridle.

(*To be continued.*)

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D. V. S., New York City.

Leucæmia in a Cat [*Lellman*].—At the end of February I was called to examine a cat that had, according to the version of the owner, emaciated markedly in spite of a good appetite. I found a two-year old cat, badly nourished, in a state of general weakness with her hairy coat minus its gloss. The visible mucous membranes were very pale, the pulse small, soft, irregular, 150 to the minute; the cardiac pulsation was abnormally vigorous, and could be felt on both sides of the chest.

As the animal was very emaciated the pulsation could also be seen at the left side of the chest. Percussion in the cardiac region showed increased dullness, and gave an almost tympanitic note. Both sounds of the heart were audible, the first sound louder and of shorter duration than normal, the second sound decidedly weakened and accompanied by a mur-

mur synchronous with the ventricular systole, the well recognized hæmic murmur of anemia not dependent upon any organic change in the valves but upon the changed character of the blood passing through the valves, in short, an inorganic murmur. The temperature varied from 101⅗° F. to 102⅖° F. Respiration was quickened to 48 per minute. Percussion of the thorax showed nothing abnormal with the exception of the increased dullness before spoken of. Auscultation of the lungs showed vascular breathing somewhat strengthened. The appetite was good, the dejecta dark and thin. The liver and spleen were found upon palpation to be markedly enlarged; the submaxillary, post pharyngeal, supramaxillary and inguinal glands were easily felt because of their increased size. Unfortunately I could obtain no urine, gladly as I would have liked to make a urinary analysis; for it would have been interesting to observe whether (xanthi, hypoxanthi, guanin, etc.) were present in abnormally large quantities. The general behavior was normal; sensation was unimpaired; the cat was relatively active. In order to substantiate the diagnosis of leucæmia I examined the blood by the Thomazeiss hæmatositometer; the blood—taken from the ear—even to the eye was of a changed (lighter) color and coagulated slowly.

It took four days to count the red and white corpuscles, the average ratio of the red to the white corpuscles being only twelve to one; amongst the markedly changed and increased leucocytes I found multinuclear and mononuclear cells, also cells of a hyaline consistency. A large number of red corpuscles in their embryonic state were present. These facts may perhaps explain why the red corpuscles were so markedly diminished in number (olygocythæmia rubra), their number being only 300,000 per cubic miliimetre.

I also found a number of needle-shaped (Charcot's) crystals. This blood examination therefore established the diagnosis of leucæmia. The animal remained in this same condition for about a week and then suddenly died from collapse, with symptoms of internal hemorrhage. At the autopsy 1½ tablespoonfuls of blood were found extravasated under the skin upon the left side of the thorax; the abdominal cavity contained two tablespoonfuls of an extravasated serous exudate; the peritoneum showed a greyish white discoloration; the intestinal canal was practically empty, containing a little fluid matter; the rectum contained fæces of a soft consistency; a half dozen ascarides were also present in the bowel. The solitary follicles of the

colon were enlarged; the liver also showed upon its diaphragmatic surface beneath the serous membrane covering the middle and right lobes numerous small hemorrhages; the liver acini were enlarged and clearly differentiated from one another; the liver tissue was greyish yellow, the central veins contained hardly any blood, the consistency of the liver soft and friable. The spleen was enlarged, of a dark red color, of pretty firm consistency; the Malphigean bodies were prominent and enlarged from the size of a bean to that of a hazel nut. The kidneys upon longitudinal section showed numerous small hemorrhages in the medullary layer. The pleura contained a tablespoonful of bloody serum, the pericardium a half a teaspoonful. The heart was markedly enlarged and in a condition of diastole, both ventricles containing blood, the right ventricle the most, the heart was dilated, the myocardium, especially of the right ventricle, being atrophic, the left ventricular wall being also thinner than normal; the valves showed nothing abnormal with the exception of a little thickening of the free edge of the mitral valve, a change insufficient to cause either stenosis or insufficiency; the heart muscle was dry and of a greyish red color. The lung was retracted, dotted upon its dorsal aspect under the visceral pleura with numerous white nodules varying in size from that of the head of a knitting needle to that of a pea; upon scraping the lung tissue with the flat surface of the knife, a foaming fluid exuded. The bronchial and other lymphatic glands were enlarged, of a soft consistency, and of a greyish white color. The cerebral and spinal meninges showed numerous small hemorrhages. The marrow of the long bones was dark red and of a gelatinous consistency similar to juniper jelly; the bones very, very fragile.—(*Berl. Thierärzt Woch.*)

TANNALBIN AS AN INTESTINAL ASTRINGENT [*Engel*].—For years chemists have been trying to find a preparation of tannin that would not be dissolved or absorbed in the stomach, and that would thus be able to exert its astringent effect upon the bowel. Tannigen meets these indications and has been used with good results. G. made use of the fact that egg albumen after long continued heating at high temperatures becomes nearly or altogether impervious to the action of the gastric juice. This statement applies to tannin albumenates. By tests it was established that heating for five to six hours at 100° to 120° C. suffices to keep the egg albumen thus heated intact from the action of gastric juice for 24 hours, whereas the pancreatic juices digest it. The tannin albumenate tannalbin occurring as

a light yellow tasteless powder is of great value in all cases of acute diarrhœa or chronic catarrh of an uncomplicated nature, where a reliable intestinal astringent is desired. It is harmless, has the advantage of tastelessness, and furthermore does not disturb the stomach. For the adult 1,0 every one or two hours, for minors 0,5 thrice daily is the ordinary dose; after one or two days' use in this way, the dose can be diminished.—(*Berl. Thierärzt. Woch.*)

ACUTE NEPHRITIS FOLLOWING INTERNAL AND EXTERNAL ADMINISTRATION OF SPIRITS OF TURPENTINE.—A filly was treated for colic by its owner with a drench containing tr. opii and spirits terebinth; at the same time the abdomen was well rubbed with spirits of turpentine.

The animal quickly became decidedly worse. Pulse and respiration increased. Temperature rose to 103° F. Visible mucous membranes showed marked reddening and congestion; profuse general perspiration set in. Examination per rectum elicited marked pain as soon as the author pressed with his hand against the posterior wall of the left kidney. Although the bladder was empty, tenesmus set in. The coming on of the nephritis was according to the opinion ot the author favored by the condition of strangury of the kidney, present in most cases of colic. Phlebotomy lowered the blood pressure and diminished the kidney pain. Internally the animal received opium, aconite, and belladonna; later tincture of aconite with sodium bicarbonate. Hot fomentations were applied in the region of the kidneys and lukewarm soap water injections given per rectum. Under this treatment and proper diet the animal recovered in three days. The author recommends tinct. aconit. and sod. bicarb. as the best sedative for the urinary apparatus.—(*Berl. Thierärzt. Woch.*)

BELGIAN REVIEW.

HYPERTROPHY OF THE PROSTATE IN A DOG [*By Prof. E. Lienaux*].—In a very interesting article the author considers some manifestations which are met with in this affection, and which will considerably help in the clinical study of enlarged prostates. The first case is one with complications of *intermittent hemorrhages.* The animal, losing blood through the penis, by drops, immediately after micturation or when making the slightest effort; after a certain time, however, a complete impossibility for urinating became manifest, and, notwithstanding

a comparatively successful systotomy the patient died, exhibiting at the post-mortem a prostate as big as two large nuts, with its structure still homogeneous but of soft consistency. A second case refers to a *calcular cystitis*, sequella of a prostatic hypertrophy. The dog had some difficulty in micturating, due to the presence of a calculus in the urethral canal. Relieved several times of the same trouble, one day one of the stones was found engaged in the bony structure of the penis, which for its removal demanded a complicated urethrotomy, which in the presence of the uncertainty of permanent relief, decided the owner to have the dog destroyed. The bladder was found to contain a large sediment and numerous small calculi,—some sixty. The prostate was enormous. A third case relates a manifestation of *perineal hernia* produced by a displacement of the urinary bladder, which at first can be reduced, but after some time has assumed large dimension and imposes for its reduction, the puncture of the bladder through the perineum. Cystopexy is the only possible chance for a permanent relief,—but during the operation the dog dies by hemorrhage, and at the autopsy here again a noticeable hypertrophy of the prostate proves to be the original cause of the trouble. To conclude, the author relates a case of enlarged prostate, complicated with *hydronephrosis*, resulting from the obstacle to micturation due to the abnormal gland; it was enormous and containing in its lobes softened centres, with colloid but not purulent contents. After considering the indications of treatment according to the manifestations, Prof. Lienaux speaks favorably of castration, which by recent experiments seems to be followed by atrophy of the prostate structure. Other treatments which have found their way in human surgery do not appear to be practicable in veterinary. —(*Annales de Med. Vet.*)

ACCIDENTS OBSERVED IN RACE HORSES.—On account of the importation of English thoroughbreds into Belgium and their presence on the racing tracks, Mr. F. Hendricsen has had opportunity to observe some very interesting cases, a number of which he records. *Tendinous Distensions.*—Under this denomination he refers to the " breaking down " of the English, which can involve the laceration of some of the organs of suspension back of the cannon, tendons or ligaments, a condition called in Belgium the "snapping" of the tendons. The treatment which he recommends is either cold or hot water, blisters of mercurial ointment, or severe cauterization in lines and intermixed with points. A rest of not less than six months is required. *Sprain*

of the Axoido-atloid Joint, with Enlargement of the Right Lateral Muscles of the Neck.—A horse jumps an obstacle, falls and remains down as dead. Raised, his head is carried low down and deviated to the left; there is a very tender spot over the axoido-atloid articulation, which is very much swollen, and an enlargement on the right side of the neck; there is no crepitation. The treatment consisted of continued cold water irrigation, followed by gradual mechanical elevation of the head and neck, with a wide blister over the enlargement of the neck. The animal got well in five weeks. *Laceration of the Means of Attachment of the Sus-carpal (Trepezium) Bone.*—Also the result of a fall, this was characterized by a swelling of the external and posterior face of the knee, hot and painful. The sus-carpal bone is very movable and can be pushed to the posterior face of the knee. No flexion at the joint. The horse resists energetically when it is attempted. Cold water irrigations, compresses of tincture of arnica, followed by blistering and massage, with later on cauterization, gave good results. The animal was no longer fit for racing purposes. *Laceration of the Internal Crural Muscles.*—This occurred without external violence, on a flat field race, where the mare suddenly stopped. Taken to her stall, she shows great suffering, is covered with perspiration, and unable to rest on the right hind leg. This is the seat, on its internal face, of an enormous swelling, fluctuating and very painful. There is no crepitation. Cold applications were prescribed. By order of the owner the mare is destroyed on the third day. At the post-mortem is found a complete *transversal laceration* of long and short adductors of the leg with a partial rupture of the pectineus and small adductor of the thigh. *Fracture of the Scapula.*—Like the preceding, this took place in a flat field race, the animal at her best speed suddenly stopped and is on three legs unable to rest on the right fore. She suffers greatly, she struggles whenever she is touched, there is a large swelling of the olecranian muscles and of the whole right scapular region. She was found dead the next day in her box. A comminuted fracture (some twenty fragments) was found, which occupied the neck of the bone.—(*Ibid.*)

ACTINOMYCOSIS OF THE RUMEN AND RETICULUM [*By MM. Lienaux and Hamoir*].—After a brief history of the etiology of actinomycosis and its comparatively contagious nature, where all manifestations of the disease seem to be due to the introduction of the parasite through a trauma of some kind; and after considering that these traumæ may take place in the digestive

organs and that though some of them, like the rumen and the reticulum, which often contain foreign bodies which may produce the necessary traumatic lesions, yet actinomycosis seems to be rather rare in them. The authors relate an interesting case of an animal, which, while at pasture, having become tympanitic, was improperly tapped by her owner. Relieved from the gastric trouble, she began to suffer with the formation of successive abscesses in various parts of the flank, some thirty in number, which, however, by treatment subsided, and after a year the animal was sold to the butcher for market. At the slaughter-house four actinomycotic tumors were found in the rumen, one in the reticulum. Some had peduncles which united the growths to the fistulous wounds of the flank. To accuse the puncture of the rumen as the cause of the trouble would be an easy matter, had the pus of the abscesses of the flank been examined for the actinos; as it was not, the door is open to doubt. But, say the authors, in similar conditions, pus ought always to be carefully examined and its nature established.—(*Ibid.*)

ITALIAN REVIEW.

LINGUAL ACTINOMYCOSIS IN A COW.—Dr. V. Bonaretti, in the *Clinica Veterinaria*, records an interesting case of recovery of this affection by the iodide of potassium treatment. Affected for some time, and treated for simple glossitis first, the condition of the tongue was such when seen by Bonaretti that the administration of a drench containing 10 grammes of the iodide in a quart of water could not be administered. Deglutition was impossible and the animal threatened to fall at each attempt made. It was then decided to try administration by the rectum. After taking rectal injections of iodide of potassium for three days in succession, the improvement of the tongue was such that it became possible to continue the treatment; which was done. Recovery was complete by the administration of five doses of the iodide, 10 grammes to each dose.

A CASE OF NASAL POLYPUS SIMULATING GLANDERS.—Dr. G. Bosso, in the *Giornale della Royale Societa Nazionale Veterinaria*, of Turin, records the case of a horse which was suspected of glanders, which had been placed under observation, and in the discharge of which numerous micro-organisms had been found, which on potato culture had failed to give the characters of the coloration of the bacillus mallei. Repeated injections of mallein had given rise only to a slight elevation of

the temperature and a small local reaction at the point of injection, but insufficient to justify a positive diagnosis of glanders. The animal, on account of his debilitated condition, was ultimately destroyed. At the post-mortem no lesions of the lungs nor of the other organs were found, but on the right side of the septum, whose mucous membrane was of a pale rose color, was found a pedunculated polypus which filled up the entire cavity on that side. This polypus consisted of round cells contained in a condensed connective cellular substance, supplied with blood vessels of new formation.

GLANDERS DIAGNOSTICATED BY MALLEIN AND CONFIRMED BY INOCULATION TO THE DONKEY [*By Dr. P. Prignaux*].—This animal, ten years old, had presented a discharge of the left nostril, with a small enlarged maxillary gland; and had been treated as suffering with chronic catarrh. The author, suspecting glanders, had employed mallein and obtained an elevation of temperature sufficiently characteristic to justify his diagnosis of glanders, and accordingly prescribed sanitary precautions. Not satisfied with this result a third veterinarian was called; he, not being an advocate of the value of mallein, advised the test of inoculation to a donkey, which was done, and followed in a few days by the most severe manifestations of acute glanders. Both animals were then destroyed. At the post-mortem, lesions of the nose, which were not discovered during life, were found, with extensive glanderous deposits in the lungs. This experimental control speaks well in favor of the value of mallein in the diagnosis of glanders.—(*Clinica Veterinaria.*)

THE INJECTIONS OF CHLORIDE OF SODIUM IN SHOULDER LAMENESS.—In the *Clinica Veterinaria*, Dr. A. Trinchera records a number of experiments, which he has made at the Surgical Clinic of the Milan Veterinary School, to test the value of the saturated solution of chloride of sodium injected subcutaneously or intramuscular; 5 to 10 grammes were used in each injections, and from 5 to 8 injections made alternately in the shoulder region, posterior spinatis muscle, arm and antibrachial region. Extensive myositis followed these injections, in some cases abscesses. Relief was also obtained. The conclusions of the excellent report of Dr. Trinchera are as follows: *1st.* The subcutaneous injections produced a phlegmon more or less severe and diffuse, according to the quantity of the solution used; intramuscular injections gave rise to a myositis, proportionate to the quantity of liquid used. *2d.* With perfect antiseptic measures, both injections can be used and the formation of abscesses

avoided. *3d.* Subcutaneous injections give rise to a phlegmon which acts as a powerful revulsive. Intramuscular injections produce an inflammation of the muscles and also of the deep tissues, whose revulsive action not only facilitates the reparative processes, but also produce a greater immobility. *4th.* From the cases observed, no specific action can be granted beyond its irritating power. *5th.* Subcutaneous injections have produced less severe effects than the intramuscular,—and for that reason they will give rise to a direct effect on the organs of locomotion of the region, which will be better immobilized. *6th.* Subcutaneous injections, to resume, are better indicated in recent and slight cases; intramuscular in chronic cases with muscular atrophy. *7th.* The revulsion and immobilization obtained by the injections, especially the intramuscular, are superior to those produced by all other means recommended. *8th.* If the effects of the injections are greater than those of other remedies, it does not follow that it is an infallible panacea for all shoulder lameness. *9th.* At any rate, when the injections are successful, the lameness does not subside until the phlegmon, the abscess or the myositis have disappeared. *10th.* Taking in consideration the other means employed against shoulder lameness, it seems that the duration of the treatment is about the same as in the injections of chloride of sodium, and more if used in the muscles. The injections, however, present the advantages of not leaving any blemishes.

REVIEW OF BIOLOGY.

UPON THE GLANDEROUS SCIRRHOSIS OF THE LIVER [*By Cadiot and Gilbert*].—At the autopsy of a 12-year-old horse, which had died of extensive lesions of pulmonary glanders, the authors found in the liver scirrhotic lesions well marked, as well as glanderous nodules. The scirrhosis was evidently perilobular, though not exclusively, as it spread by numerous expansions in the lobes themselves. Distinct in some places, the nodules and scirrhosis mingled together in thousands of places and seemed to be acting under the same causal agent. Glanders, then, may bring on scirrhosis of the liver. The authors have already related muscular and tuberculous hepatic scirrhosis in the horse and on that account are inclined to believe that this affection takes place in that animal with a relative facility. —(*Soc. of Biol.*)

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EXPERIMENTAL LESIONS OF THE LIVER BY INTRA-VENOUS INJECTIONS OF MICROBIAN TOXINES [*By MM. Teissier and Guinard*].—If two cubic centimeters only of toxine methodically sterilized and obtained either from a culture of the bacillus of Lœfler, or one of the pneumo-bacillus liquefaciens of Arloing, are injected, one may rapidly see (sometimes after 13 or 14 hours, as this occurs when the injection has been pushed in the portal vein) extensively marked alterations in the liver. These observations, made upon more than 25 dogs and 15 rabbits, show that microbian toxines are apt to produce *alone* and, so to speak, immediately, *without the intervention of the micro-organisms*, very severe lesions of the liver, which resemble entirely those described by Hanot and Gaston under the name of *infectious liver*. These lesions are susceptible by their serious nature, and specially their extent, to explain the sudden appearance of the highly acute accidents which take place clinically after some microbian infections, such as diphtheria.—(*Ibid.*)

UPON THE PROPAGATION OF TUBERCULOSIS OF CATTLE BY FÆCAL MATTERS [*By MM. Cadéac and Bournay*].—Previous researches which we have made have shown that the bacilli of Koch swallowed by dogs pass through the digestive tract of those animals and are found intact in the fæcal matters. Is it the case with cattle? Everything seems to show the contrary. These animals are the soil of production of the microbe of tuberculosis. Its digestive canal is well disposed to hold it, fix it or absorb it. The rumen permits the alimentary and infectious masses to gather in it and to remain in it a long time, the omasum and the many leaves, whose action is purely mechanical, by their arrangement permit the microbes to remain in them without being destroyed. Those which pass through enter the intestines, where they are absorbed at the intestinal villi as shown by the experiments of many. If this absorption be total or partial is not known. And yet this is an important question to the point of view of the hygiene and prophylaxy of tuberculosis. Indeed, if the bacilli of Koch are not all absorbed, the phthisical animal, which swallows the virulent matters as they are expectorated, or which eliminate on the surface of the intestinal mucous membrane the bacilli developed on a level with the ulcerated Peyer's patches, contribute to the extension of the disease through the fæcal matters. We have tried to verify this mode of contagion. To a one-year-old bull we have given for four days a meal composed of hay and tuberculous lung, very rich in bacilli, taken from an adult cow. For four consecutive

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days 200 grammes of fæces were gathered and diluted in 100 cubic centimeters of water. The product of this, filtrated, furnished, after 12 hours, several cubic centimeters of a greenish liquid of which 2 c. c. were injected in the ear of a rabbit. Sixteen of these animals were thus inoculated. Two died of septicæmia, one of intoxication, thirteen became tuberculous. Two died after a month and had pulmonary miliary tuberculosis. The eleven surviving ones were killed afterwards and presented tuberculous indurations of the lungs, liver, spleen and kidneys. Besides these experiments, the microscopic examinations of the fæces of the bull revealed the presence of the bacilli of Koch.

This demonstrates evidently that fæcal matters are virulent and liable to propagate tuberculosis as much as sputa of men.—(*Ibid.*)

INOCULABILITY OF TUBERCULOSIS OF MAMMALIA TO BIRDS [*by MM. Cadiot, Gilbert and Roger*].—In previous papers the authors have tried to show the difference between the tuberculosis of mammalia and that of birds. They have demonstrated that inoculations of the human bacillus does not produce lesions in gallinaceous. There are exceptions to this rule, however; out of 40 hens inoculated with human bacillar lesions, 5 presented visceral tuberculous granulations. Since 46 hens were inoculated; 12 of them were placed in conditions which show that the hyperthermy of the birds is not the principal cause of their resistance to the tuberculosis of mammalia. Of 34 others, 3 took tuberculosis. Altogether out of 86 hens, 7 took tuberculosis and transmitted it to 2 other hens. These positive results, representing 10 per cent., are unfortunately left without explanation, the cause of resistance of the birds and the conditions of their receptivity remained unfound. But the experiments of the authors allow us to recognize the modifications that the bacilli of mammalia may undergo in the organism of gallinaceous. Sometimes it preserves its original character and cannot be transmitted to the hen; at others it becomes able to be reinoculated, conserving sometimes, from its origin, the possibility to resume it in animals, which, like the dog, are little sensible to the aviary virus. Bacilli of mammalia and of birds do not then represent different breeds of a same species; their distinctive characters are too contingent to establish between them an absolute distinction.—(*Ibid.*)

REVIEW OF PHYSIOLOGY.

ASSISTANCE TO A CEREBRAL HEMISPHERE BY THE OTHER [*By M. de Manaceine*].—Proofs of the duality of the brain have been seen in cases of dividing of the personality, in loss of memory after disease or traumatisms, in the return of memory after a long time, in remembering while asleep what was forgotten while awake. New proofs are produced by the author. The left hemisphere is the most active in the awakened state and the most torpid during sleep. If one tries to tickle with a feather the face of a person sleeping deeply, he will make motions as to chase flies, but always with the left hand, the right remaining asleep. On the contrary, left-handed people make with the right hand the same movements to chase flies off, no matter whichever side of the face is tickled. In young dogs kept in absolute sleep, the cutaneous sensibility diminishes and becomes alternate, passing after 10 or 20 seconds from the right to the left side; and the pupil of the insensible side is itself indifferent to the action of light. It seemed as if these animals have their hemispheres periodically and alternately active. In experiences of retrography, if one is made to write with both hands, there is always among the letters of the direct writing some written in writing of mirror (retrography) with the right hand, and still they had been written at that moment by direct writing with the left hand. And a last fact, in case of left hemicrania accompanied with difficulty of speech and of writing, the direct writing with the left hand (corresponding to the activity of the brain) becomes more clear and firm than in ordinary condition of health.—(*Rev. Med. Sc.*)

UPON THE ALTERATIONS OF THE NERVOUS SYSTEM DURING INANITION [*By A. Monti*].—Lesions of various organs have been described in inanition, but it has always been admitted, till at present, that the central nervous system remains intact and that its material like its functional integrity are preserved. Experiments made by Monti on rabbits submitted to a long fast, have shown him that inanition brings on deep alterations in the nutrition of the central nervous system; located on the protoplasmic prolongations, on the body of the nervous cell and consisting in a varicous atrophy: the cells degenerate in losing their aspect of adult to return to that of fœtal element. —(*Ibid.*)

THE EFFECT OF SUPPRESSION OF WATER IN ANIMALS [*By*

Perince and Scagliosi].—A dog, deprived of water, died after the eleventh day, having lost 24 to 25 per cent. of his weight. Fowls, deprived of water, continued to eat corn up to the eighth or tenth day, then died. The microscopic examination showed an infiltration of little cells in the conjunctival tissue; hemorrhages in the muscles of the skeleton, of the tongue and of the heart, in the lungs, the kidneys, the nervous system, etc.—(*Ibid.*)

EXPERIMENTS UPON THE PITUITARY GLAND [*By G. Vassale and E. Sacchi*].—From previous observations the authors have concluded that the total destruction of the hypophysis has, in dogs and cats, a fatal result in less than fourteen hours with characteristic symptom: hypothermy. Subcutaneous injections of juice from the hypophysis gland raise the temperature and improve the general condition. The same thing occurs in strumiprive cachexia, in the spontaneous myxœdema or that of operation when one injects thyroid juice. The partial destruction of the pituitary gland is compatible with the life of the animal (at least for a year). However, it produces attenuated symptoms of total destruction, anorexia, dullness, weakness of the hind quarters, fibrillar contractions, muscular shakings, thermic lowering. These phenomena diminish. It is likely that hypophysis, like the thyroid, secretes a special product, necessary to the economy.—(*Ibid.*)

INFLUENCE OF THE TOTAL OR PARTIAL SUPPRESSION OF THE HEPATIC FUNCTION UPON GLYCEMIA IN NORMAL AND DIABETIC ANIMALS [*By Mr. Kaufmann*].—The author performs, in the dog, the extirpation of the stomach, the intestines, spleen, pancreas, and liver—that is, the digestive viscera. The animal may survive several hours. In a second series, he removes the intestines only, the liver is left; in a third he extirpates the stomach, spleen, and pancreas, and leaves the liver. He observed that, when the hepatic function is suppressed, the proportion of sugar diminished rapidly in the blood, whether the animal dies normal or diabetic. There is hypothermy. When the liver is entirely cut off from the blood of the portal vein and still receives that of the hepatic artery, there is yet hypoglycemia and hypothermy, as if it has been removed. The suppression of only a part of the portal circulation (or intestinal or gastro-splenic) has no depressing effect upon the glycemia. It may even increase in diabetic. Then the temperature rises. Portal circulation is in closer proportion with the glycogenic function of the liver than that of the hepatic artery. The portal vein is

the true functional blood vessel of the liver. These facts are agreeing with the theory which attributes the excess of sugar in the blood of diabetics to an exaggeration of the formation of this substance in the liver.—(*Arch. of Phys.*)

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The 33d Annual Meeting of the United States Veterinary Medical Association will be held in the parlors of the Genesee House, Buffalo, N. Y., September 1st, 2d, and 3d, 1896.

Officers.—W. Horace Hoskins, President, 3452 Ludlow St., Philadelphia, Pa.; F. H. Osgood, Vice-President, 52 Village St., Boston, Mass.; C. C. Lyford, Vice-President, 821 3d Ave., S. Minneapolis, Minn.; R. H. Harrison, Vice-President, Atchison, Kansas; S. Stewart, Secretary, 7½ So. James St., Kansas City, Kansas; Jas. L. Robertson, Treasurer, 509 9th Ave., New York, N. Y.

Comitia Minora.—W. L. Williams (Chairman), Bozeman, Mont.; Thomas B. Raynor, Chestnut Hill, Pa.; Leonard Pearson, Philadelphia, Pa.; T. J. Turner, Kansas City, Mo.; N. P. Hinkley, Buffalo, N. Y.; D. E. Salmon, Washington, D. C.; L. H. Howard, Boston, Mass.; and the officers *ex-officio*.

Committee of Arrangements.—N. P. Hinkley, 359 Ellicot St., Buffalo, N. Y. (Chairman); C. J. Willyoung, 215 Carolina Ave., Buffalo, N. Y.; John Wende, 1593 Main St., Buffalo, N. Y.;

Committee on Intelligence and Education.—A. W. Clement, 916 Cathedral St., Baltimore, Md. (Chairman); John Faust, 209 Union Ave., Poughkeepsie, N. Y.; A. H. Baker, 2537 State St., Chicago, Ill.

Committee on Diseases.—S. J. J. Harger, 205 N. 20th St., Philadelphia, Pa. (Chairman); W. B. Niles, Ames, Iowa; T. D. Hinebauch, Fargo, N. Dak.; John Wende, Buffalo, N. Y.

Committee on Army Legislation.—J. P. Turner, Fort Meyer, Washington, D. C. (Chairman); John R. Hart, 2577 Ambro St., Philadelphia, Pa.; F. H. Mackie, Fairhill, Md.

Committee on Publication.—W. L. Williams, Bozeman, Mont. (Chairman); N. P. Hinkley, Buffalo, N. Y.; S. Stewart, Kansas City, Kansas.

Resident State Secretaries.—Alabama—C. A. Cary, Auburn; Arizona—D. Lemay, Fort Grant; Arkansas—R. R. Dinwiddie, Fayetteville; California—R. A. Archibald, San Francisco, 405 26th St.; Colorado, J. K. Thompson, Pueblo, 301 S. Union Ave.; Connecticut—R. P. Lyman, Hartford, 328 Asylum St.; Delaware—H. P. Eves, Wilmington, 507 W. 9th St.; District Columbia—J. H. Adamson, Washington, 716 13th St.; Illinois—R. P. Steddom, Galesburg; Indiana—F. Braginton, Hammond; Iowa—G. A. Johnson, Sioux City, City Bld.; Kansas—N. S. Mayo, Manhattan; Louisiana—W. H. Dalrymple, Baton Rouge, 207 N. Boulevard St.; Maine—H. H. Choate, Lewiston; Maryland—W. C. Sigmund, Baltimore, 1918 Wilkins Ave.; Massachusetts—Madison Bunker, Newton; Michigan—S. Brenton, Detroit, 83 5th St.; Minnesota—M. H. Reynolds, St. Anthony Park; Mississippi—Tait S. Butler, Agricultural College; Missouri—J. M. Phillips, St. Louis, 3146 Easton Ave.; Montana—W. L. Williams, Bozeman; Nebraska—A. T. Peters, Lincoln, Experiment Station; New Hampshire—Lemuel Pope, Jr., Portsmouth; New Jersey—J. P. Lowe, Passaic, Box 183; New York—C. D. Morris, Pawling; North Carolina—F. P. Williamson, Raleigh, 122 W. Hargett St.; North Dakota—T. D. Hinebauch, Fargo; Ohio—J. C. Meyer, Jr., Cincinnati, 1111 Walnut St.: Pennsylvania—W. L. Rhoads, Lansdowne; Rhode Island—J. A. McLaughlin, Providence, 50 Benefit St.; South Carolina—Benj. McInnes, Charleston; South Dakota—M. J. Treacy, Fort Meade; Tennessee—J. W. Schiebler, Memphis, 312 3d St.; Virginia

—Geo. C. Faville, Norfolk, 46 Charlotte St.; Washington—S. B. Nelson, Pullman ; West Virginia—L. N. Reefer, Wheeling, 1406 Chapline St.; Wisconsin—G. Ed. Leech, Milwaukee, 150 7th St.

Veterinarians desiring to procure an application blank or a copy of the constitution can procure the same by writing to the resident State Secretary of his State or to S. Stewart, the general secretary, at 7½ So. James St., Kansas City, Kans.

INSTRUCTIONS TO PERSONS ATTENDING THE MEETING.

Arrangements have been made for us for rates over the Trunk Line Association which has original jurisdiction and we have every reason to believe the adjoining lines will grant the same rates. It has been done heretofore.

1. The reduction is to persons going to the meeting over the Joint Traffic Association and probably over all lines between the Missouri river to the Atlantic.

2. The reduction is fare and one-third on Committee's certificate, conditional on there being an attendance at the meeting of not less than 100 persons who have traveled thereto on some legitimate form of railroad transportation.

3. The reduction applies to persons starting from Trunk Line territory by any of the roads named below, who have paid 75 cents or upwards for their going journey. Each person availing of it will pay full first-class fare going to the meeting and get a certificate filled in on one side by the agent of whom the ticket is purchased. Agents at all important stations and coupon ticket offices are supplied with certificates.

4. Certificates are not kept at all stations. If, however, the ticket agent at a local station is not supplied with certificates and through tickets to place of meeting, he can inform the delegate of the nearest important station where they can be obtained. In such a case the delegate should purchase a local ticket to such station and there take up his certificate and through ticket to place of meeting.

5. Going tickets, in connection with which certificates are issued for return, may be sold only within three days (Sunday excepted) prior to, and during the continuance of the meeting; except that, when meetings are held at distant points to which the authorized limit is greater than three days, tickets may be sold before the meeting in accordance with the limits shown in regular tariffs.

6. Deposit the certificates with the secretary or other proper officer of the organization at the meeting, for necessary indorsement and visé of special agent.

7. Certificates are not transferable, and return tickets secured upon certificates are not transferable.

8. On presentation of the certificate, duly filled in on both sides, within three days (Sunday excepted) after the adjournment of the meeting, the ticket agent at the place of meeting will return the holder to starting point, by the route over which the journey was made, at one-third the highest limited fare by such route. The return ticket will in all cases be closely limited to continuous passage to destination.

9. No refund of fare will be made on account of any person failing to obtain a certificate.

ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA.

The third annual meeting of the Association of Veterinary Faculties will be held at Buffalo, New York, September 4th, 1896. The headquarters of the Association will be the Genesee House, where a special parlor is provided for the meeting.

The programme consists of the reports of several committees, notably those of the committee on a uniform veterinary degree, and the committee to devise legislation in regard to a uniform examination by State Boards of Veterinary Examiners. The action upon these reports by the association will be of great interest and importance. The subjects laid over from the last

meeting, from want of time, will now find consideration. These subjects are:

1. A uniform course of instruction, *i. e.*, the subjects that should be taught in every veterinary school and the time devoted to each. Speaker, Prof. J. W. Adams, Philadelphia.

2. Mutual recognition of students by colleges belonging to the Association of Faculties. Speaker, Prof. H. D. Gill, New York.

3. Competitive examination for position in veterinary faculties.

4. College fees.

It is to the interest of the university veterinary department and to the individual veterinary colleges to send representatives to the coming meeting. All voting delegates must be properly accredited by their college authorities.

OLOF SCHWARZKOPF,

Chairman Executive Committee, Assoc. of Veterinary Faculties.

PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

The second examination of the Board was conducted at Philadelphia, on the 15th and 16th of June, at City Hall, commencing at 10 A. M. each day. The entire Board was present to conduct the various examinations, as allotted to the several members.

Some twelve candidates presented themselves, representing the American, University of Pennsylvania, New York and Toronto Veterinary Colleges.

The following applicants obtained the necessary 65 percentage, entitling them to the license of the Board: Drs. H. A. Christmann, Gilbert C. Drummond, John R. Mohler, H. D. Martien of Philadelphia, graduates of the Veterinary Department of the University of Pennsylvania; Drs. A. W. Ormiston and Samuel Henry Johnston, of Philadelphia, graduates respectively of the American and the New York Veterinary Colleges; Drs. C. M. Heberton, Cynwyd, Pa., Charles H. Miller, Duncannon, Pa., James R. Mahaffy, of Wilmington, Delaware, graduates of the Veterinary Department of the University of Pennsylvania, and Dr. R. G. Rice, of Rome, Pa., graduate of the Ontario Veterinary College. One graduate of the Veterinary Department of the University of Pennsylvania, and one from the Ontario Veterinary College failed to obtain the required average.

The Board elected officers for the ensuing year as follows: President, W. Horace Hoskins, Philadelphia, Pa.; Secretary-Treasurer, Dr. S. J. J. Harger, 205 N. 20th St., Philadelphia, Pa.

Prosecutions in a number of cases were ordered, and vigorous measures will be adopted in dealing with all violations of the several provisions of the acts governing the practice of veterinary science in the Keystone State. W. HORACE HOSKINS,

Secretary.

The following questions were propounded in the various departments, the candidates being required to answer ten out of the fifteen in each branch. Where not otherwise mentioned, the question had reference to the horse.

Veterinary Diagnosis.—How would you differentiate between chronic glanders with lesions in the head and collection of the nasal sinuses? What are the characteristic symptoms of spavin? Give the diagnostic signs of pleurisy and pneumonia in their several stages. What are the diagnostics signs of traumatic pericarditis in cattle; for what other pathological conditions may it be mistaken? How would you distinguish mange from vesicular eczema in the dog? What are the diagnostic symptoms of collection of the guttural pouches and with what other conditions may it be confounded? How do you differentiate between shoulder and foot lameness? Upon what is the diagnosis of navicular arthritis based? In case of lameness how do you determine the lame member? What is the difference in the movements of the member in shoulder lameness as compared with foot lameness? What are the diagnostic signs of laminitis? Given a chronic case with a history of gradual falling off in flesh, tucked-up abdomen, general stiffness in locomotion or lameness, possibly intermittent, if one or more members, what would be your diagnosis? With what other conditions may it be confounded? What is your general procedure in examining a horse for lameness under the most favorable conditions? How would you diagnose anthrax in cattle? How do you administer tuberculin for diagnostic purposes in tuberculosis, and what constitutes a reaction? What constitutes a typical reaction with mallein in a glandered horse?

Practice of Veterinary Medicine.—Give the causes, symptoms and treatment of polyuria. Give the diagnostic symptoms of pleurisy and treatment of the same. Give the symptoms and exciting causes of tetanus. Give the symptoms of choke in the horse and ox and treatment for the same. Give the diagnostic symptoms of impaction of the stomach, and treatment for the same. Give the symptoms, causes and treatment of of osteo porosis. How would you distinguish between contagious pleuro-pneumonia and tuberculosis in the ox? Give the diagnostic symptoms of hog cholera and the best methods of control of such an outbreak. What group of general symptoms make it difficult to distinguish between intestinal parasites and distemper in the dog in the incipient stage? What is periodic ophthalmia? How would you diagnose it? and state treatment. What are the predisposing causes, diagnostic symptoms and treatment of parturient apoplexy (milk fever) in cattle? What is influenza, and what forms and group of symptoms does it assume? In an outbreak of rhino-adenitis among a large number of animals, what general plans of management would you adopt? What varieties of worms infest the digestive tract of a dog? What diseases infect the air passages of sheep?

Sanitary Medicine, Meat and Milk Inspection.—What diseases of animals are most dangerous to consumers of meat? What measures are required to suppress and eradicate pleuro-pneumonia contagiosa and tuberculosis in cattle? Give the symptoms and sanitary requirements of glanders. In what manner would you demonstrate the contagiousness of rabies? What sanitary conditions should be observed in the construction and management of a large barn where transient animals are sheltered? Under what conditions would you condemn meat for human food? How would you impress your seal of

condemnation of live stock at export stations? Supposing that you were placed in charge of some large abattoir as inspector, explain how you would conduct the affairs of your office. What are the indications of putrefaction? How would you examine pork for trichinæ? What is colostrum; give its composition in the cow? What would you consider a proper basis of solids in milk? How would you determine same? Under what conditions would you condemn milk as unfit for human food? What is the specific gravity of cow's milk of good quality? What three essential parts is milk composed of, and how may these principal constituents be separated?

Surgery.—Describe symptoms and surgical treatment for collection of the superior maxillary sinuses in the horse. Describe symptoms and surgical treatment of collection of the guttural pouches in the horse. Describe symptoms and surgical treatment of roaring in the horse, viz.: laryngotomy or arytenectomy. Describe symptoms and surgical treatment for cartilaginous quittor, resection of lateral cartilage. Describe symptoms and surgical treatment for amputating penis of the horse. Describe symptoms and surgical treatment of spavirn. Describe symptoms and surgical treatment for paraphimosis. Describe symptoms and sugical treatment for navicular disease. Describe symptoms and surgical treatment for ringbone. Describe symptoms and surgical treatment for conjunctivitis. Describe symptoms and surgical treatment for string-halt. Describe surgical treatment for toe-crack, superficial and deep. Give indications for tracheotomy in the horse—describe operation. Describe ovariotomy in the bitch and give physical contraindication. Describe symptoms and surgical treatment for impaction of the rumen of the cow.

Zootechnics.—Describe the character of an eight-year-old mouth. What is atavism? Give an example. Give the signs of a good milk cow? What precautions would you observe in purchasing a horse for breeding purposes? What diseases are hereditary and what is the relative value of pedigree and performance? What is a normal food, and what constitutes a normal day's ration for a horse? Describe a Dutch (Freisian) cow. What are the races of horses (equus caballus)? Name and describe two. Define and illustrate by example the different methods of reproduction applied to the domestic animals. Give the difference between the Spanish and the Oriental ass. What in your opinion is the relative influence of the male and female upon the young? What is hybridization? Give hybrid between equine and asinine species. What are the essential characteristics of a hybrid? Define precocity; its causes and characteristics, with example. Describe the time and frequency of the menstruations in the mare and cow. At what age does puberty occur in the various domestic female animals?

Therapeutics and Materia Medica.—What are the therapeutic uses for camphor? What is the dose for a horse of oleum tiglii? Hydrargyrum chloridum mite? Describe the physiological actions of opium. What is the antidote for opium poisoning? Name the alkaloids of hyocyamus. What are the uses of chloral hydrate, and the contra-indications to its use? Write a prescription for purpura. What are the therapeutic uses of belladonna? Give the dose of its principal alkaloid to a setter dog. What is the antidote for lead poisoning? Describe briefly the physiological actions and uses of lobelia. What do you consider the best cardiac depressant? Anti-spasmodic? Alterative? What are the contra-indications to the use of chloroform? Describe briefly how you would treat a case of arsenical poisoning in a dog. How would you disinfect a stable? Name three (3) mineral astringents. Three (3) vegetable astringents. What is the principal use of spigelia?

Obstetrics.—What does successful fecundation depend upon? Mention some of the causes of sterility. Describe fœtal circulation. What are the uses of the liquor amnii? What constitutes the umbilical cord and what purpose does it serve? Give some of the rational and some of the material signs of pregnancy. What is the normal duration of pregnancy in the mare? What in the cow? What hygienic measures would you observe in the management of animals during gestation? Name the diseases peculiar to pregnancy. Mention some of the accidents of pregnancy. What constitutes normal parturition? What are the various stages of parturition? How would you deliver a mare or cow in which the four feet of the fœtus were presented, sterno-abdominal presentation, head retained? How would you treat complete inversion of the uterus? What is mammitis? Give symptoms and treatment for same.

Chemistry.—Define chemistry. Define an element. What is atomic weight? Name and define the various kinds of attraction. What are the symbols for the following

elements: oxygen, mercury, silver, lead, sodium, manganese, potassium, magnesium, nitrogen, and iron? What is a test for a carbonate? What is the composition of water? Air? Write the formula for common salt, hydrochloric acid, sulphuric acid, epsom salts, and baking soda. What is the atomic weight of hydrogen, oxygen, nitrogen, sulphur and silver? What is the flame test for sodium? Copper? Give a test for arsenic. Give a test for albumen in urine. Give a test for sugar in urine. How would you prepare sulphuretted hydrogen? How would you test a case of lead-poisoning in a cow from its milk?

Anatomy.—Describe the bones of the pelvis. Describe a dorsal vertebra. Describe the flexor pedis perforans and its check ligament. Name the superior cervical muscles in their order of superposition. Name and describe the ligaments of the fetlock. Name and locate the principal superficial veins of the horse. Describe the plantar nerves. Describe the regional anatomy in low neurectomy. What is the difference between the lungs of the horse and those of the ox and what the principal peculiarity of the latter? Describe the arterial supply of the foot below the fetlock. Describe the cunean tendon. How can it be located? Describe the liver. What is the difference between the kidney of the horse and that of the ox? Describe the common carotid arteries. Describe the pneumogastric nerve.

Physiology.—What are the different forms of digestion? What is the function of salivary digestion? On what does gastric digestion act? What part of digestion is carried on in the small intestines? What effect have the movements of mastication on the salivary flow? What is chyme? What are the functions of the liver? What is Heintz's test for bile? In what way is the coloring matter of the bile obtained? What are the functions of the testicles? What other tissues aid in this secretion? What is the object of respiration? Are the movements of the lung passive or active? Is respiration purely an involuntary act? What keeps this centre active?

Pathology.—Define inflammation. What is a complete cell? What are the steps of inflammation? What are the terminations of inflammation? What are the two general divisions of inflammation? What is chronic inflammation? Define glanders. What kind of an inflammation? Define tuberculosis. What is a cyst? How many kinds? What is a malignant tumor? Benign tumor? What are the physical types of the following tumors: osteoma, myoma, neuroma, lipoma? What is leukæmia? What is the cause of moist gangrene? What are the stages of croupous pneumonia? Define anthrax.

VETERINARY COLLEGE ANNOUNCEMENTS.

NEW YORK STATE VETERINARY COLLEGE.—We have received the announcement of the opening of the State Veterinary College at Cornell University, in Ithaca, which will begin instructions on September 21, 1896. The catalogue, which will be mailed to any one upon application, is quite exhaustive, giving the act and amendments which established the school and appropriated the money for its maintenance; excellent illustrations of the buildings and adjunct departments; the faculty of veterinary medicine and collateral branches, with a description of the various chairs, and many other details. The faculty of the veterinary college is as follows: Jacob Gould Schurman, D. Sc., LL. D., President; James Law, F. R. C. V. S., Professor of Principles and Practice of Veterinary Medicine, Veterinary Sanitary Science, and Veterinary Therapeutics; the

chair of Veterinary Surgery, Zoötechny, Obstetrics, and Jurisprudence is yet vacant; Pierre Augustine Fish, B. S., D. Sc., D. V. S., Assistant Professor of Veterinary Physiology, Materia Medica and Pharmacy; Veranus Alva Moore, B. S., M. D., Professor of Veterinary Pathology and Bacteriology, and of Meat Inspection; Simon Henry Gage, B. S., Professor of Microscopic Methods, Histology and Embryology; Grant Sherman Hopkins, B. S., D. Sc., Assistant Professor of Veterinary Anatomy and Anatomical Methods; Benjamin Freeman Kingsbury, A. B., Ph. D., Instructor in Veterinary Pathology and Bacteriology; Raymond Clinton Reed, Ph. B., Instructor in Microscopic Methods, Histology and Embryology. Besides this large array there are a number of professors and teachers in Cornell University who furnish instruction to the veterinary students. While this is a most satisfactory faculty for the inauguration of the State College, we would have liked to have seen the names of more veterinarians on the list, as it has been proven that, while theoretical teaching of the higher grade is indispensable, practical instruction by practical men makes successful practitioners. Certainly, no fault will be found with Professor Law nor Professor Fish (the only veterinarians in the faculty), and we have no doubt that the Chair of Surgery will be acceptably occupied by the opening of the session; but it does appear that there are many other of the departments that could have been assigned to our modernly-educated veterinarians, who could have dispensed not only theoretical but practical knowledge in their various departments. Aside from the meagre number of veterinarians in the faculty, the announcement bears every indication of a brilliant opening in September, and as the sessions are of long duration, and covering three years, students will have every opportunity to prepare themselves in the advanced branches that are forcing themselves upon the modern veterinary surgeon. Address, Prof. James Law, Director, State Veterinary College, Ithaca, N. Y.

THE KANSAS CITY VETERINARY COLLEGE.—We have received the sixth annual announcement of this institution, in which the directors proclaim some important changes and improvements for the coming session. The college will have a new home, having secured a commodious building, in a healthful location, with pleasant surroundings. Class rooms, laboratories, museum, etc., are now being arranged and supplied with modern equipment, well ventilated and lighted. The hospital arrange-

ments are ample and afford most excellent opportunity for clinical study and demonstration. A large court gives the students space, light and privilege to study and assist in the treatment of the great variety of cases offered by a free clinic maintained by the college faculty. The faculty has been strengthened by several additional members and new studies have been added to the curriculum. The adoption of a three-year graded course places this college on a plane with other advanced seats of learning. A post-graduate course, covering the subjects of meat, milk, and dairy inspection, has been arranged for the latter part of the year, beginning January 12th and continuing eight weeks. The faculty consists of the following brilliant array of veterinarians and others: Chas. J. Sihler, V.S., Sesco Stewart, M.D., D.V.M., Robert C. Moore, D.V.S., Isidore J. Wolf, M.D., Leon Rosenwald, M.D., Silas J. Brooking, M.D., D.V.S., Thomas A. Bray, D.V.S., Benjamin F. Kaupp, D.V.S., Sidney L. Hunter, V.S., R. H. Harrison, D.V.S., Wm. C. Barth, V.S., Theodore Schaefer, M.D., Joseph S. Lichtenberg, M.D., Thomas J. Turner, D.V.S., E. Von Quast, M.D., Frederick W. Hopkins, D.V.S., U. B. McCurdy, D.V.S., Frank M. Sheridan, Esq., L. Enos Day, V.S., O. G. Atherton, D.V.S., Geo. Q. Smith, Ph.D., and Thomas C. Proctor, M.D. The location of the new college building is at 1404 and 1406 Holmes Street, Kansas City, Kansas, and the dean is Prof. Sesco Stewart, M.D., D.V.M., to whom all communications should be addressed.

THE AMERICAN VETERINARY COLLEGE.—The announcement for the twenty-second annual session is issued, and this year gives carefully compiled rules of matriculation and admission as approved by the Board of Regents, the course of study, including her great array of adjunct branches, her requirements for graduation, list of prizes and beneficiaries, along with the practical department (the American Veterinary Hospital). The Board of Trustees are the same as last year, with the addition of W. B. E. Miller, D. V. S., of Camden, and three alumni trustees (L. H. Howard, of Boston; Charles Burden, of New York, and W. H. Lowe, of Paterson, N. J.) No changes are made in the governing faculty, while in the adjunct H. D. Hanson, D. V. S., who has for a number of years been occupying the chair of canine medicine and helminthology, has been raised to the associate professorship of Theory and Practice, and Allen S. Heath, M. D., V. S., has been made Professor of Hygiene, Breeding and Zoötechnics. The catalogue also gives

the graduates of the college since its institution—nearly six hundred—the prize winners since its organization, and many other interesting details for those interested. Address A. Liautard, Dean, 141 West Fifty-fourth Street, New York City.

UNITED STATES COLLEGE OF VETERINARY SURGEONS.—The announcement for the coming session of this college is probably the most artistically printed and arranged catalogue that has ever been issued by an American veterinary college, profusely illustrated by splendid half-tones. Three sessions of six months each are necessary for graduation, and the faculty contains the names of five veterinarians, Prof. C. Barnwell Robinson, V. S., being dean, and Professor of Theory and Practice and Anatomy; Andrew C. Seacord, D. V. S., Professor of Dental Surgery and Anatomy; Harry W. Acheson, D. V. S., Professor of Cattle Pathology and Obstetrics; Elias S. Walmer, V. S., Professor of Canine Practice; J. P. Turner, V. M. D., Professor of Sanitary Medicine and Zoötechnics, while the other branches are in the hands of M. D.'s. Address C. Barnwell Robinson, Dean, 222 C Street, N. W., Washington, D. C.

UNIVERSITY OF PENNSYLVANIA (VETERINARY DEPARTMENT).—No changes are noted in the veterinary department of this great university for its twelfth annual session. Profs. Harger, Pearson, and Adams retain the chairs they formerly held, while the adjunct faculty of demonstrators and lecturers is not materially changed. For the new illustrated catalogue address Jno. Marshall, M. D., Dean of the Veterinary Faculty, 36th and Pine Sts., Philadelphia, Pa.

MALLEIN AS A DIAGNOSTIC FOR GLANDERS.

LETTER EXPLANATORY.

BROOKLYN, July 14, 1896.

Editors American Veterinary Review:

MY DEAR SIRS:—Seeing that it is imperative that veterinary surgeons in this city report all contagious diseases in their practice to the Board of Health, for my guidance in complying strictly with that ordinance, I wished to have the opinion of the Health Department on the virtue of mallein as a diagnostic agent in glanders.

I enclose you the opinion of said department resulting from

that correspondence, and if you think the same of sufficient importance for a space in the REVIEW it is at your service.

If the stamping out of glanders in this city is practised on the lines of the opinion expressed, the alarming prevalence is readily accounted for. Yours truly,

L. MCLEAN, M.R.C.V.S.

LETTER OF INQUIRY.

BROOKLYN, June 17, 1896.

Dr. Z. Taylor Emery, Commissioner of Health, City:

SIR:—To enable me to comply intelligently with the ordinances of the Board of Health, I will thank you to inform me if your Department considers an animal that reacts to the mallein test affected with glanders? An early reply will oblige

Yours, etc.,

L. MCLEAN, M.R.C.V.S.

COMMISSIONER'S LETTER OF TRANSMISSAL.

DEPARTMENT OF HEALTH, COMMISSIONER'S OFFICE,
38 AND 40 CLINTON STREET, BROOKLYN, N. Y., June 24, 1896.

L. McLean, M.R.C.V.S., 14 Nevins Street, Brooklyn, N. Y.:

DEAR DOCTOR:—Enclosed please find a copy of the special report of Dr. E. B. Ackerman, Veterinary Inspector of this Department, relating to the mallein test and its being considered infallible, or otherwise, for the determination of the presence of glanders. Trusting the same will be satisfactory to you, I am,

Yours very sincerely,

Z. TAYLOR EMERY, M.D., *Commissioner of Health.*

REPORT OF VETERINARY INSPECTOR ACKERMAN.

BROOKLYN, June 20, 1896.

Hon. Z. Taylor Emery, M. D., Commissioner of Health:

DEAR SIR:—In reply to L. McLean's letter of June 17, 1896, which was referred to me for an opinion, I beg to state that there are several questions to consider before the matter can be definitely settled. The history of the case before and after injection would have to be taken into consideration, as well as the amount of reaction obtained from the inoculation and the quality of mallein used; since, if the mallein is improperly made, it will not produce a reaction on a diseased horse, and unless mallein is properly diluted it will occasion a thermic reaction in a healthy horse. I do not think we are justified in destroying an animal in good health, which is fat and with coat and body in good healthy condition, and with no external symptoms of glanders,

such as fever, enlarged glands, discharge from nostrils, chancres in nostrils, or large swollen legs, corded lymphatics, farcy buds, etc., simply on account of a reaction after an injection of mallein, and there is no law which will compel a man to destroy a horse upon a mallein test by itself and without other symptoms. But, of course, if the owner is willing, the horse may be killed and the danger is thus disposed of.

Prof. Nocard, of Alfort, France, a scientific authority, says: "Mallein is a very delicate test and will react where there is very little pulmonary glanders present, and that a certain number of horses, if removed from the medium of infection, may recover. Only those which present some clinical signs should be destroyed. The others should be isolated or removed from infection and submitted from time to time, every two months, for example, to a new test with mallein, and those which, upon two succeeding injections with mallein, show no reaction, should be considered as definitely cured. These precautions are a safeguard to the owners of animals and have been adopted by the French Minister of Agriculture."

I do not know about being cured, but I know there are some horses which, almost a year ago, reacted to mallein, but had no clinical symptoms, and the same horses are working to-day and are in good condition. Some of these horses gave a reaction of from 4 to 6 degrees F. Normal mallein will give a slight reaction with some of the constitutional diseases and I do not consider the mallein test as infallible.

Yours respectfully,

(Signed) E. B. ACKERMAN, D. V. S., *Veterinary Inspector.*

THERAPEUTIC NOTES.

By H. D. HANSON, D.V.S., New York City.

In canine practice cases of asthma seem to occur quite frequently.

For *the relief of the asthmatic attacks*, the following is worth a trial:

℞	Ammonii bromidi,	ʒ ii
	Ammonii muriati,	ʒ iss
	Tincturæ lobeliæ,	ʒ iii
	Spiritus ætheris nitrosi,	ʒ i
	Syrupi acaciæ, q s.	ʒ iv

Misce. Sig.: *One* to *two* drachms every *two* or *three* hours, according to the size of the dog, etc.

For *the disease asthma*, try the following, which should be continued for some time:

℞ Potassii iodidi, ʒ i
Liquoris ammonii arsenitis, ʒ ii
Tincturæ belladonnæ, ʒ iii
Aquæ, ad ℥ iv

Misce. Sig.: *One* to *two* drachms every *three* or *four* hours, according to size, etc. If the potassium iodide cannot be borne by the patient use the syrup of hydriodic acid in *one drachm* doses for awhile.

For *rachitis in puppies*, the following may give good results:

℞ Calcii phosphatis.
Ferri phosphatis, āā gr. xxxvj.

Misce. et fiat chartulæ No. xii.
Sig.: One powder night and morning.

For *otitis* and *otorrhœa* in dogs, especially if the discharge is offensive:

℞ Acidi carbolici,
Zinci sulphatis,
Plumbi acetatis, āā gr. x.
Aquæ distillatæ, fl. ℥ viii.

Misce. Sig.: Inject twice a day.

In prescribing for many of the ailments that come under the veterinarian's care, disinfectants are very frequently indicated, both internally and externally. Probably they are not prescribed as much as they ought to be. Any of the following, which belong to this class, may be of service, and are here enumerated merely to refresh the memory:

Lime, sulphur, charcoal, camphor, benzoin, oil of wintergreen, oil of peppermint, chinoline, salicin (salicylate of soda, salol, etc.), creosote, carbolic acid, corrosive sublimate, boracic acid, permanganate of potassium, chlorine and compounds, bromine and compounds, iodine and compounds.

Along with the above the following should not be lost sight of: Perfect dryness, free ventilation, absence of air, water, extreme cold, extreme heat.

COMMUNICATIONS.

HORSE-SHOEING.

PHŒNIX, ARIZONA, May 18, 1896.

Editors American Veterinary Review:

DEAR SIRS:—In your valuable REVIEW of May I noticed an article on "shoeing" by E. L. Morgenroth. The article was interesting to me, not only for its true worth, but was of especial interest as it came from the pen of one of my old classmates. I agree with him that there is little written on this subject in veterinary

journals. This is, perhaps, to a great extent, the fault of the subscribers, as we are all rather loath to write our experiences and observations—some from lack of time, but more, perhaps, have an idea they cannot write anything interesting. I can offer both of these excuses, but, as E. L. M. says his article was written to open discussion, I also write in the same spirit.

As I lived in Wisconsin quite a number of years, I know some of the conditions there in regard to the abuse of horses' feet; but of all climates, I think the climate and soil here in the valley is the hardest on the foot of the horse, and, I might say, there is as little care taken of horses' feet here as any place I have lived. This last is on account of there being so many horses raised in comparison to the number used, and as they require no stabling during the year, their feet are seldom looked after until they are broken, which is usually at two or three years old. As irrigation ditches are numerous the horses run in these at will, and from there to the grass-covered fields, inducing a great growth of hoof, which breaks and cracks, leaving the foot in anything but a proper condition. This applies only to the great valleys, as the range horse has a hoof smooth and almost as hard as iron. There are some good shoers, but there is a tendency here, as everywhere, to scoop out the bottom of the foot, nail on the shoe, then rasp the foot to fit the shoe, instead of fitting the shoe to the foot. Factory-made shoes, where there is a narrow rim around the outside for the wall only to rest upon, with a concave surface where the sole should rest, should in my opinion, never be put on, as my observation has convinced me the side of the shoe next the foot should rest its whole width on the foot, at the same time paring the foot so the frog will support its share of the weight of the horse. This is important, as the frog is nature's wedge to prevent contraction of the heel. In case of interfering, a slight lowering of the inside of the foot (instead of the outside, as most shoers do) will in most cases prevent this.

Forging.—There is quite a tendency in young horses to forge, (that is striking the toe of the hind foot against the toe of the front foot, on the under side, just as the front foot is raised from the ground), which causes a clicking sound. The best remedy for this is to let the hind toe extend longer, keeping the heel low, which delays the action of the hock, giving the front foot more time to move forward out of the way. At the same time shoe light behind, and slightly increase the weight in front. This plan will, to a great extent, also obviate the trouble of overreaching or grabbing the quarter. Although

in this trouble a slight increase in the weight of the outside web of the hind shoes is found beneficial.

E. L. M.'s treatment of quarter-crack is good, but I would add a little more, by making a transverse fissure just at the superior point of the crack. This is done with any cautery or firing iron, and allows motion of the edges of the original split without extending it farther up, and, as the hoof grows, the split will gradually grow off, leaving the hoof sound above the transverse fissure.

Calks.—As calks are always objectionable, and are only used as a matter of necessity, we here in the valleys have some advantage in this line, as there is no necessity for calks, only in a few instances, on draft teams in the cities, where the streets are kept sprinkled, or on heavy freight teams going over mountain roads, as there is no snow or ice to contend with.

F. O. RICHMOND, M. D. C.

BIBLIOGRAPHY.

ANÆSTHETICS IN VETERINARY SURGERY (Anæsthesiques en Chirurgie Veterinaire). By Mr. G. Desoubry, adjunct of Physiology and Therapeutics at Alfort. Asselin and Houzeau, Paris.

A little volume of over 100 pages, with some illustrations, where the subjects of anæsthesia, general and local, are concisely treated in eight chapters. After some general remarks on the physiology of anæsthesia, the uses of chloroform, chloral and ether are extensively presented, and their applications considered in the various classes of animals. The mixed methods follow and occupy an important part. The local anæsthetic, with its generalities and its special modes of application, fills the last part of this little work, which is presented to the veterinarians by a preface from Professor Kaufmann.

NEWS AND ITEMS.

SAMUEL D. BICKEL, V.M.D., has graduated from the Medical Department of the University of Pennsylvania.

THE extensive practice of the late James Hamill, V.S., of New York, has been purchased by John J. Hayes, D. V. S.

THE MISSOURI STATE VETERINARY ASSOCIATION will hold its annual meeting at Mexico, Mo., on August 26.

DRS. R. H. HARRISON, T. J. Turner and F. W. Hopkins, graduates of the A.V.C., are members of the teaching staff in the Kansas City Veterinary College.

E. N. LEAVY, D.V.S., graduate of the A.V.C., class of '96, has become a canine specialist, with an infirmary at Lexington Avenue and 61st Street, New York City.

WHY should a man who writes D.V.S. after his name, register by affidavit? Does he assume the title? If so, should it be? Judiciary Committee, will you please answer?

DR. T. J. TURNER, ex-State Veterinarian of Missouri, has accepted an appointment in the meat inspection service of Bureau of Animal Industry and is stationed at Kansas City.

JOHN S. BUCKLEY, D.V.S., gold-medalist at the last examination of the American Veterinary College, has been selected by the Maryland Agricultural College as instructor in veterinary medicine.

PROBABLY the most common mode of infection by glanders is by means of the drinking water. Veterinarians can do much to lessen the spread by seeing that the troughs in stables, etc., be thoroughly cleaned and disinfected in the proper way.

THE MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION, by unanimous vote, directed its delegates to the U.S.V.M.A., at Buffalo, to extend to the parent association an urgent and cordial invitation to hold the 1897 meeting at Kansas City.

LADIES AT BUFFALO.—It is expected that large numbers of the fair sex will visit the Queen City of the Lakes and Niagara Falls on the occasion of the Buffalo meeting of the three veterinary associations, accompanying their husbands, fathers, or brothers, as the case may be.

H. D. GILL, V.S., dean of the New York College of Veterinary Surgeons, has passed the civil service examination of the Bureau of Animal Industry, and has been directed to report at Chicago. We can scarcely see how the doctor can afford to relinquish his many duties and associations in the Metropolis to fill an official position in the Windy City.

J. ELMER RYDER, D.V.S., who was so unfortunate at the recent fire at the American Horse Exchange as to lose his valuable collection of instruments and many other paraphernalia of a well-appointed office, is now located on the same block, and is beginning to become reconciled to his hard fortune, in which his colleagues have felt the greatest sympathy.

ANTIPYRINE IN THE TREATMENT OF CONJUNCTIVITIS.—It is freely used by oculists at home and abroad; is indicated in the treatment of the various forms of conjunctivitis; is applied with swabs or camel's hair brushes in solution of 10 per cent. It gives rise to a little burning sensation, which soon subsides.

IMPROVED ROENTGEN PROCESS.—A dispatch from Berlin dated May 28 says that the General Electrical Society announce that an improvement has been made in the Roentgen process, and enables the interior of the head, the larynx and the action of the lungs and heart to be observed on a fluorescent screen. The statement has not, however, been well authenticated.

EASY "HONORS."—A two-line advertisement appeared in the July REVIEW to the effect that veterinary surgeons who desired to legally affix "M.D." to their names should address "Medico," 1001 Congress Street, Chicago. The advertisement passed through the business department and was inserted without the knowledge of the editors. We have since investigated the offer of the advertiser, and are convinced that there is no merit in it, and accordingly advise veterinarians to have nothing to do with it.

ILLEGAL PRACTICING.—The Judiciary Committee of the Veterinary Medical Association of New York County has been promising for a year to prosecute illegal practitioners of veterinary medicine in that county. Has anything been done? Laws made should be enforced. Veterinarians will do well to send the names and addresses of those practicing without legal right to Dr. A. O'Shea, chairman of that committee, 117 W. 46th Street, New York City. Have examples made of a few and the others will be apt to stop.

SUICIDE OF A HORSE.—A Superior, Wis., dispatch of May 30th reads: Hundreds of employees in the yards of the American Steel Barge Company witnessed a singular occurrence. A bony, played-out old bay horse walked into the shallow water in the slip known as Howard's Pocket and slowly moved farther out into the deeper water, unmindful of the shouts and missiles of the spectators on shore. When in about three feet of water, the poor animal cast one wistful look around, then deliberately put its head under water and held it there; after this, the owner, a pedler, appeared upon the scene and almost committed suicide himself when he learned of the astonishing deed of his four-footed servant. The horse, it is said, had been poorly fed and overworked.

THE HORSELESS CARRIAGE RACE.—This race came off May 30th, and was a successful failure. The route was from Kingsbridge to Irvington, N. Y., and was for a prize of $3000. The roads and weather were excellent. There were 28 entries, but only six vehicles lined up at the starting post, and four of these belonged to one concern. During the run one of the machines collided with a bicyclist, one broke a belt and also took the wrong road, another lost a wheel, the motor of another broke, and the brake failing to work it started backwards down a hill and had to be run into an embankment to stop it.

LABOR LIGHTENERS.—Our valued contemporary, the *Veterinary Magazine*, for May, has this to say: "We received with delight the twentieth annual volume of the AMERICAN VETERINARY REVIEW. What it has done for the veterinary profession and veterinary journalism in this country every one of its readers knows much better than can be detailed in words. This can be judged by the improvements on its pages and the enthusiasm of its editors. We congratulate the REVIEW from our knowledge, both professional and personal, upon the acquisition of Dr. Roscoe Bell to its editorial staff. Prosperity is our wish.". . . A well-known Western veterinarian, writing upon business matters, thus concludes his letter: "Your journal is incomparable; the veterinary profession of the country has no reason now to complain with three excellent specialty journals, of which the REVIEW is the easy leader."

VETERINARIAN FOR FOOD INSPECTOR.—Bryer H. Pendry, D.V.S., graduate of the American, class of '95, was appointed on July 15th a food inspector by Health Commissioner Emery, of Brooklyn, N. Y., after having passed a creditable civil service examination. We believe this is the first instance on record in this country where a veterinarian has received this appointment, such positions having been monopolized by the members of our sister profession. The salary is $1,000 per year, and the work does not materially interfere with private practice. The modern veterinarian is eminently fitted for the work, and such positions will be of great assistance to young men in the early days of their professional life.

BACK NUMBERS OF REVIEW FOR SALE.

I have for sale of AMERICAN VETERINARY REVIEWS VOL. X.—Nos. 3, 5, 7, 8, 12. VOL. XI.—Nos. 1, 2, 3, 5, 9, 10, 11, 12. VOL. XII.—Nos. 1, 2. VOL. XIII.—No. 1. VOL. XIV.—Nos. 2, 3. VOL. XV.—Nos. 3, 5. VOL. XVIII.—No. 5. VOL. XIX.—Nos. 11, 12. Address, WM. H. GRIBBLE, D.V.S.,
Washington C. H., Ohio.